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The Milroy Lectures

ON

DEATHS IN CHILDBED: A PREVENTABLE MORTALITY.

Delivered before the Royal College of Physicians of London on Feb. 25th and March 1st and 3rd, 1904,

BY W. WILLIAMS, M.A., M.D., D.P.H. OXON.,
MEDICAL OFFICER OF HEALTH TO THE GLAMORGAN COUNTY COUNCIL.

LECTURE I.

Delivered on Feb. 25th.

MR. PRESIDENT AND GENTLEMEN,—My first duty is to thank the Council of the College for having conferred upon me the honour of electing me to deliver the Milroy lectures for the year.

In my capacity as medical officer of health, at first in an agricultural area and afterwards in a mining and industrial county, it has been my duty to investigate on several occasions the epidemic prevalence of puerperal fever. As some of the conclusions arrived at during the earlier years of my investigation seemed startling I have been led to extend it and to include the causes of death that are incidental to childbirth. By studying the circumstances which are injurious or fatal to parturient women one may justly hope to contribute to some extent to removal of the evils which shorten their lives and to the improvement of the race generally. I have selected as my subject "Deaths in Childbed: a Preventable Mortality," for the following amongst other reasons: 1. It is a dark, deep, and continuous stream of mortality which has been running through our statistics since the commencement of registration—indeed, from the most remote periods—without showing any signs of abatement and occasionally overflowing its banks, producing epidemics with most disastrous results. 2. It is a mortality which is to a great extent preventable, as evidenced in the enormous improvement which has of late years marked the records of lying-in institutions generally and under conditions where precautionary measures are strictly observed. *Then, if preventable, why not prevented?* 3. It is a mortality which has been exceptionally high among the women of Wales, in whose health and society I am greatly interested, and with the mode of life, social relations, and conditions of the existence of whom I am fairly well acquainted. 4. It is high time that some serious attempt should be made by the legislature, the medical profession, and all concerned to put an end to such a painful sacrifice of mothers which stealthily but surely takes place annually. 5. It is a subject closely associated with preventive medicine and which equally concerns the general practitioner and the medical officer of health. I have marshalled at some trouble a formidable array of figures and facts which cannot fail to convince the most callous that it is our duty to use all endeavours to protect the valuable lives of the mothers of England and Wales, over 4000 of whom die annually in childbirth, about half of that number falling a prey to the ravages of puerperal fever which is, to a very great extent at least, a preventable disease. I wish I could designate it as an absolutely preventable disease. Some have done so, yet occasionally a few cases do occur which are difficult to trace to any definite source of infection.

What are the causes of death in childbed? These have been classified by the Registrar-General and others into two groups—(1) puerperal septic diseases and (2) accidents of childbirth—and I propose to adhere to this method. The terms "metria" and "puerperal fever," formerly employed to designate cases of death belonging to the first group, are no longer to be used. Phlegmasia alba dolens, an obviously infectious disease, was up to 1900 included in the tables with diseases of parturition. In the new tables issued by the Local Government Board and the schedules of the causes of death issued in 1901 by the Incorporated Society of Medical Officers of Health the term "puerperal fever" is to include pyæmia, septicæmia, sapræmia, pelvic peritonitis, and peri- and endo-metritis occurring in the puerperium. Under "accidents of childbirth" are included: abortion, miscarriage, puerperal mania, puerperal convulsions (including puerperal nephritis and puerperal uræmia), placenta prævia, flooding and accidental hæmorrhage, and other accidents of pregnancy and childbirth (to include puerperal thrombosis and embolism, sudden death, extra-uterine pregnancies, obstetrical operations, and retained placenta). It is with these causes of death in childbirth that I am mostly concerned. There are reasons to doubt, however, whether the returns with respect to deaths incidental to parturition are yet complete.

Childbirth and childbed.—Whenever parturition or miscarriage has occurred within one month before the death of the patient the Registrar General requires that the fact shall be certified even though childbirth may not have contributed to the fatal issue. By childbed is meant that period of a woman's life during and immediately following the act of parturition and during which women are especially liable to various diseases peculiar or incidental to childbirth. Its length varies in different cases from a few weeks to a few months or longer and is determined in ordinary circumstances by (1) the physical condition and health of the parturient woman; and (2) the care, skill, and attention extended to her during labour. There are many other diseases known which terminate fatally or are accelerated by childbirth and these may be divided into pre-existing diseases and acute diseases. The most common pre-existing diseases of long standing that terminate fatally in childbed are (according to the Registrar-General), in the order of their fatality: chronic Bright's disease, phthisis, syncope (weak heart), bronchitis, valvular disease, and anæmia. The most common acute diseases ending fatally in childbed are pneumonia, acute nephritis, influenza, acute bronchitis, scarlet fever, diphtheria, enteric fever, &c. I do not propose on this occasion to deal with these, except in so far as scarlet fever, diphtheria, and enteric fever sometimes complicate the process of childbirth. I propose to deal with the subject under the following subheadings: 1. The causes of deaths in childbirth. 2. The incidence of mortality in childbirth in (*a*) England and Wales 1847–91 (55 years) and from 1881 to 1900 (20 years); (*b*) the registration counties of England and Wales from 1848 to 1891 (54 years), and from 1881 to 1900 (20 years); (*c*) the registration counties of Wales, especially Glamorgan, Monmouth, and Salop; and (*d*) some large towns, industrial and mining centres. 3. The analysis of the causes of this mortality. 4. The mortality statistics of some maternity hospitals. 5. The etiology of puerperal fever. 6. The prevalence of epidemics of puerperal fever personally investigated and recorded by others. 7. The way in which women, especially of the poorer classes, are attended during labour. 8. The movement for insuring better training, registration, &c., of midwives. 9. The Midwives Act, 1902: (*a*) an epitome of it; (*b*) Central Midwives Board, its establishment, *personnel*, duties, regulations and suggestions just issued; and (*c*) the administration of the Act and other preventive measures. In other words, I propose to deal with the subject in its statistical, etiological, and preventive aspects. I also intend to endeavour to prove by means of statistics fairly handled and extending over considerable periods and having reference to a large number of births that the mortality in childbirth has remained undiminished, that puerperal septic diseases are to a very great extent preventable, that deaths from "accidents of childbirth" are controllable or to a considerable extent preventable, and to point out the means whereby these ends may be secured.

Puerperal septic diseases.—In the earlier reports the term "metria" is made use of up to 1850 and for many years after that date. The term "puerperal fever" was made use of for the first time in 1850 and it is often continued up to the present, but in a circular letter to medical practitioners by Dr. John Tatham they are advised to abandon it altogether. The separate forms of septic infection given in the "new list of causes of deaths as used in the annual reports of the Registrar-General of England and Wales" are puerperal septicæmia, puerperal septic intoxication, puerperal pyæmia, phlegmasia alba dolens, puerperal fever (not otherwise defined), or puerperal septic diseases. Although the exact nature of the morbid conditions thus designated is even now a subject of controversy, yet the fever with symptoms of acute and general blood poisoning to which women in childbirth are peculiarly liable has symptoms of a sufficiently definite character, such as high temperature, quick pulse, furred tongue, fœtid or suppressed lochia and milk, &c., to admit of its classification under this

heading and clear differentiation from any other causes of death in childbirth.

Accidents of childbirth.—Under this heading are contained deaths from "the various mishaps of childbirth," some of which will always be inevitable but a considerable proportion of which prove fatal in the absence of proper obstetric assistance and skill.

Table I. gives statistical information in regard to the mortality in childbirth in England and Wales for a period of 55 years (1847 to 1901) and contains the latest obtainable figures. The death-rates are based on the proportion of deaths to registered births and not on the population, as in corresponding rates for other diseases. We have in this method a more accurate gauge of the amount of the mortality, which if not absolutely correct is more nearly so than any calculation based upon an always variable population. Of course, miscarriages and stillbirths are not included, as the law does not compel the registration of these births known as stillbirths, so that the mortality in childbirth following such births is not included. Dr. J. R. Kaye in a paper entitled "Certification and Registration of Deaths—the Urgent Need for Improvement," which appeared in the *Journal of State Medicine* for June, 1902, wrote:—

> *Stillbirths.*—One of the most glaring and most dangerous defects of our Registration Acts, and the most loudly calling for reform, is the omission to compel the registration of those officially known as stillbirths. Can anything be more extraordinary than that, in this educated twentieth century, any woman, no matter her character, if she elects to call herself a midwife, is at liberty to issue a certificate for the burial of children who are born still or otherwise on her undefined certificate? Why should our maternal mortality records (imperfect though they be), upon which so much time and labour has been expended, be impaired, and why should the *compulsory contribution* (the death certificate) of the registered medical practitioner be further degraded by the acceptance of worthless information from unqualified sources?

What do Tables I. and II. prove? They do not prove very much. They show that the mortality from puerperal septic diseases reached its maximum point during registration times in 1874 when it was 3·63 per 1000; the year 1893 comes next with 3·30 per 1000. From 1874 and 1875 to 1881 the mortality was again much the same as it was before 1874. In 1881, 1882, and 1883 the mortality rate increased considerably, and this increase has continued to the present time, and was particularly high in 1892, 1893, and 1894. As far as accidents of childbirth are concerned, the mortality-rate varied from the highest in 1847 (4·5 per 1000) to the lowest in 1886, 1887, and 1889 (1·9 per 1000). Indeed, since 1874 (3·30 per 1000) there has been little or no decrease in the death-rate. It will be remembered that the year 1893 was exceptionally dry and that the mortality from enteric fever and diarrhœa was higher than in any previous year since 1884. Immediately before 1874 the death-rate from puerperal septic diseases was not particularly high, but from 1881 to 1900—a period of 20 years—there has been a higher sustained mortality than in any previous and corresponding period. During the years in question it was highest in 1893 (3·30 per 1000), the year immediately preceding the most severe outbreaks of influenza. It was lowest in 1898 (1·84 per 1000). It was not until the Public Health Act of 1872 (decreeing the appointment of medical officers of health) became generally adopted that certification of the causes of deaths by medical men was turned to scientific account, but the Registrar-General has issued most valuable reports since 1839 and it is to these reports that we are indebted for the "sheet-anchor of the public health service," the Public Health Act of 1875.

In 1874 the Registration Act was placed upon the statute book which made it incumbent on medical men to furnish certificates of the causes of deaths of all patients who died whilst attended by them. The Registrar-General in his thirty-eighth annual report for the year 1875 writes:—

> The mortality of the mothers of England and Wales, notwithstanding the progress of the obstetrical art, was higher in 1874-75 than it has been since 1847.

It was about 1874, in consequence of the Public Health Act of 1872, that it became incumbent upon local authorities in all parts of England and Wales outside the metropolis to appoint medical officers of health and it was then for the first time that the greater number of rural districts at least came under medical supervision.

The rise in the mortality from puerperal septic diseases which began after 1881 may be partly explained by the fact that it was in 1881 that the Registrar-General for the first time (with a view of making the returns of deaths in childbirth more complete in cases where the certificates of deaths

TABLE I.—*Mortality in Childbirth in England and Wales, 1847–1901 (a period of 55 years).*

Year.	Registered births of children born alive.	Deaths.			Death-rate to 1000 children born alive, from		
		Puerperal septic diseases and accidents of childbirth.	Puerperal septic diseases.	Accidents of childbirth.	Puerperal septic diseases and accidents of childbirth.	Puerperal septic diseases.	Accidents of childbirth.
1847	539,965	3226	784	2442	5·97	1·45	4·52
1848	563,059	3445	1365	2080	6·12	2·42	3·70
1849	578,159	3329	1165	2174	5·78	2·02	3·76
1850	593,422	3252	1113	2139	5·48	1·88	3·60
1851	615,865	3290	1009	2281	5·34	1·64	3·70
1852	624,012	3247	972	2275	5·20	1·56	3·64
1853	612,391	3060	792	2268	5·00	1·30	3·70
1854	634,405	3009	954	2055	4·74	1·50	3·24
1855	635,043	2979	1079	1900	4·69	1·70	2·99
1856	657,453	2888	1067	1821	4·39	1·62	2·77
1857	663,071	2787	836	1951	4·20	1·26	2·94
1858	655,481	3131	1068	2063	4·78	1·63	3·15
1859	689,881	3496	1238	2258	5·07	1·79	3·28
1860	684,048	3173	987	2186	4·64	1·44	3·20
1861	696,406	2995	886	2109	4·30	1·27	3·03
1862	712,684	3077	940	2237	4·32	1·32	3·00
1863	727,417	3588	1155	2433	4·93	1·59	3·34
1864	740,275	4016	1484	2532	5·43	2·00	3·43
1865	748,069	3823	1333	2490	5·11	1·78	3·33
1866	753,870	3682	1197	2485	4·88	1·59	3·29
1867	768,349	3412	1066	2346	4·44	1·39	3·05
1868	786,858	3503	1196	2307	4·45	1·52	2·91
1869	773,381	3283	1181	2102	4·24	1·53	2·71
1870	792,787	3875	1492	2383	4·69	1·88	3·01
1871	797,428	3935	1464	2471	4·98	1·81	3·09
1872	825,907	3803	1400	2403	4·60	1·70	2·90
1873	829,778	4115	1740	2375	4·96	2·10	2·86
1874	854,956	5927	3108	2819	6·93	3·63	3·30
1875	850,607	5064	2504	2560	5·95	2·94	3·01
1876	887,968	4142	1746	2396	4·66	1·97	2·69
1877	888,200	3443	1444	1999	3·88	1·63	2·25
1878	891,906	3300	1415	1885	3·70	1·59	2·11
1879	880,359	3340	1464	1876	3·79	1·66	2·13
1880	881,643	3492	1659	1833	3·94	1·88	2·08
1881	883,642	4227	2287	1940	4·78	2·58	2·20
1882	889,014	4524	2564	1960	5·09	2·89	2·20
1883	890,722	4508	2616	1892	5·06	2·94	2·12
1884	906,750	4647	2468	1879	4·79	2·72	2·07
1885	874,970	4419	2420	2029	4·98	2·71	2·27
1886	903,866	3877	2078	1799	4·72	2·39	1·99
1887	886,331	4160	2450	1710	4·69	2·8	1·9
1888	879,868	4160	2386	1774	4·73	2·49	2·01
1889	885,944	3585	1852	1733	4·05	2·09	1·95
1890	869,937	4255	1956	2299	4·89	2·24	2·62
1891	914,157	4787	1973	2814	5·24	2·15	3·06
1892	897,957	5154	2356	2838	5·78	2·62	3·16
1893	914,542	5950	3023	2927	6·51	3·30	3·19
1894	890,289	4775	2167	2608	5·36	2·43	2·92
1895	922,291	4219	1849	2370	4·57	2·00	2·56
1896	915,309	4561	2053	2508	4·98	2·24	2·74
1897	921,693	4250	1836	2414	4·61	1·99	2·62
1898	923,285	4074	1707	2367	4·41	1·84	2·56
1899	928,646	4326	1908	2418	4·66	2·05	2·63
1900	927,062	4454	1941	2514	4·81	2·09	2·71
1901	927,807	4394	2079	2315	4·73	2·24	2·49

TABLE II.—*The Important Features of the Foregoing Table.*

England and Wales.	Death-rate per 1000 births. Total deaths in child-birth.	Deaths from puerperal septic diseases.	Deaths from accidents of childbirth.
Average of 5 years from 1851–1855	4·9	1·5	3·4
,, 5 ,, 1856–1860	4·6	1·5	3·0
,, 5 ,, 1861–1865	4·8	1·6	3·2
,, 5 ,, 1866–1870	4·6	1·5	3·1
,, 5 ,, 1871–1875	5·4	2·4	3·0
,, 5 ,, 1876–1880	3·9	1·7	2·2
,, 5 ,, 1881–1885	4·9	2·8	2·1
,, 5 ,, 1886–1890	4·5	2·4	2·1
,, 5 ,, 1891–1895	5·4	2·5	2·9
,, 5 ,, 1896–1900	4·6	2·0	2·6
,, 1 year 1901	4·7	2·2	2·4

were not satisfactorily filled up) commenced the practice of sending out letters of inquiries to all practitioners who had used the terms "peritonitis," "pyæmia," "septicæmia," &c., in registering the deaths of women of the child-bearing age. It is certain that such a practice (which has been continued up to the present time) has led to the inclusion under the heading of "puerperal fever" of a number of deaths that would otherwise not have been classified as such, and doubtless the increased mortality from this cause is more apparent than real. I am perfectly willing to make full allowance for this and to concede that the sustained increase of the mortality in childbirth, especially puerperal fever (puerperal septic diseases) during the last 20 years may be at least partly accounted for in this way. When this is granted we are still face to face with the fact that the child-birth mortality has not at all diminished in the past 20 years; on the contrary it will be noticed in glancing over the above tables that this mortality for the years 1892, 1893, and 1894 was 5·78, 6·51, and 5·36 per 1000 respectively, and that 6·51 per 1000, the rate for 1893, is the highest on record since the commencement of a system of registration. Moreover, the mortality rates per 1000 from puerperal fever and accidents of childbirth for these years are correspondingly high, viz.:—

	1892.	1893.	1894.
Mortality in childbirth	5·78	6·51	5·36
Puerperal fever	2·62	3·30	2·43
Accidents, &c.	3·16	3·19	2·92

Therefore it will be seen that the mortality in both groups has remained undiminished up to the present. How can this anomaly be explained in view of the enormous advances made in surgery, of the adoption of aseptic and antiseptic precautions in normal midwifery practice, of the reduction of mortality in childbirth that has occurred in the case of lying-in hospitals and under other conditions, and of the improvements in sanitary conditions generally that have taken place during this period? There is only one way of possibly explaining this increase and if we are justified in answering (though on this point I have no information) that some of the amended death certificates sent in response to the circulars of the Registrar-General would otherwise have altogether escaped registration under the heading of childbirth, we are also justified in believing that the general death-rate of childbed mortality, apparently stationary, or very nearly so, for the last 40 years, has in reality declined somewhat and "that in spite of what I fear must be admitted—viz., that the advance of civilisation does not at all tend to decrease the perils incidental to the physiological function of childbirth." There is, however, no getting away from the fact that during the last 20 years, when a more accurate registration has been adopted, upwards of 40 per cent. of the total childbed mortality has been caused by septic diseases. It will further be seen that this undiminished mortality has been sustained for a period of 20 years and that the sources of fallacy are not confined to one or to a few years. It will be noticed also that this period (1881–1900) of undiminished mortality in childbirth coincides with a period in which enormous strides have been made in all matters pertaining to sanitation generally and with a period of improved certification of the causes of death in connexion with childbirth. It is highly probable, therefore, that this undiminished mortality is the direct result of the improved certification and that it is more apparent than real. It has been proved without a doubt that during recent years the mortality in lying-in institutions generally—both in their internal and external departments—has also decreased to the vanishing point, so that we are forced to the conclusion that this undiminished and sustained mortality takes place outside maternity hospitals—i.e., in general practice—and that the conditions under which women are confined outside of these institutions have not shared to an equal degree the improvements effected in their internal and external departments.

TABLE III.—*Mean Mortality Rates per 1000 for a Period of 54 Years (1848–1901) in each Registration County.*

Division and registration county.	Puerperal septic diseases.	Accidents of child-birth.
I. London—		
London	2·1	2·3
II. South Eastern—		
Surrey	1·9	2·6
Kent	1·6	2·3
Sussex...	1·3	2·6
Hants	1·7	2·6
Berks	1·7	2·8
III. and IV. South Midland—		
Middlesex	1·9	2·6
Herts	1·7	2·7
Bucks	1·5	2·9
Oxfordshire	1·6	2·7
Northants...	1·9	2·5
Hunts	1·3	2·3
Bedfordshire	1·7	2·7
Cambridgeshire	1·5	2·4
V. East—		
Essex	1·5	2·3
Suffolk	1·4	2·4
Norfolk	1·9	2·7
VI. South-Western—		
Wilts	1·7	3·1
Dorset...	1·3	2·8
Devon...	1·6	2·6
Cornwall	1·2	3·1
Somerset	1·6	2·7
VII. West Midland—		
Gloucestershire	1·8	2·7
Herefordshire	1·8	3·3
Salop	2·0	3·1
Staffordshire	2·0	2·6
Worcestershire	1·9	2·6
Warwickshire	1·7	2·4
VIII. North Midland—		
Leicestershire	1·7	2·4
Rutlandshire	1·3	1·9
Lincolnshire	1·5	2·7
Notts	1·9	2·6
Derbyshire	2·1	3·1
IX. North-Western—		
Cheshire	2·2	3·2
Lancashire	2·3	3·1
X. Yorkshire—		
West Riding	2·1	2·9
East Riding	1·7	2·5
North Riding	1·8	3·0
XI. Northern—		
Durham	2·1	2·9
Northumberland	2·2	2·9
Cumberland	2·1	2·9
Westmorland	1·8	2·6
XII. Welsh—		
Monmouthshire	2·0	3·6
South Wales	2·2	3·7
North Wales	2·1	2·2

Before proceeding to investigate the causes at work in sustaining this persistently high mortality it would be useful to consider its geographical distribution. The various registration counties in England and Wales present marked differences in reference to death-rate from childbed mortality and I have therefore decided to consider each registration county on its own merits (Table III.); on a former occasion I have worked out the statistics from 1848 to 1894, and for the purposes of these lectures I have done so up to 1901.

The foregoing figures show that the death-rate from puerperal septic diseases (per 1000 registered births) ranges from 2·3 to 1·2 in the various counties thus:—

TABLE IV.—*Death-rate from Puerperal Septic Diseases in Registration Counties.*

Lancashire	2·3	Surrey	1·9	Oxfordshire	1·6
		Middlesex		Devon	
		Northants		Somerset	
Cheshire	2·2	Norfolk		Kent	
Northumberland		Worcestershire			
South Wales		Notts			
		Gloucestershire	1·8	Bucks	1·5
		Herefordshire		Cambridgeshire	
London	2·1	North Riding		Essex	
Derbyshire		Westmorland		Lincolnshire	
West Riding				Suffolk	1·4
Durham		Hants	1·7		
Cumberland		Berks			
North Wales		Herts		Sussex	1·3
		Bedfordshire		Hunts	
		Wilts		Dorset	
Salop	2·0	Warwickshire		Rutland	
Staffordshire		Leicestershire			
Monmouthshire		East Riding		Cornwall	1·2

The mean death-rate per 1000 for England and Wales is 1·8. Lancashire heads the list with 2·3 and is closely followed by Cheshire, Northumberland, and South Wales with 2·2; London, Derbyshire, West Riding, Cumberland, and North Wales with 2·1; Salop, Staffordshire, and Monmouthshire, with 2·0; Surrey, Middlesex, Northants, Norfolk, Worcestershire, and Notts with 1·9, all of which are above the mean for England and Wales (1·8). Cornwall has the lowest rate—1·2 per 1000—and Sussex, Hunts, Dorset, and Rutland come next with 1·3; Suffolk has 1·4; Bucks, Cambridgeshire, and Essex have 1·5; Kent, Oxfordshire, Devon, and Somerset, 1·6; and Hants, Berks, Herts, Bedfordshire, Wilts, Warwickshire, Leicestershire, and East Riding, 1·7.

That there is a marked difference in the various rates is obvious, but we are not justified at this stage in drawing any conclusion from the figures before us, for even the circumstances which obtain in various localities only a few miles apart in the same county are vastly different, as I hope to prove later. However, as a general rule it would seem that the rate was highest in the western counties, especially in the hilly districts, or roughly in those counties west of a line drawn from the mouth of the Severn to that of the Tees.

The death-rate from accidents of childbirth ranges from 3·7 to 1·9 per 1000 registered births, thus:—

TABLE V.—*Death rate from Accidents of Childbirth in Registration Counties.*

South Wales	3·7	Berks	2·8	Northants	2·5
Monmouthshire	3·6	Dorset		East Riding	
Herefordshire	3·3	Herts	2·7		
		Oxfordshire			
Cheshire	3·2	Bedfordshire		Cambridgeshire	2·4
Lancashire	3·1	Somerset		Suffolk	
		Gloucestershire		Warwickshire	
Wilts	3·1	Lincolnshire		Leicestershire	
Cornwall		Norfolk			
Salop		Sussex	2·6	London	2·3
Derbyshire		Surrey		Kent	
		Hants		Hunts	
North Riding	3·0	Middlesex		Essex	
Bucks	2·9	Devon			
West Riding		Staffordshire		North Wales	2·2
Durham		Worcestershire			
Northumberland		Notts			
Cumberland		Westmorland		Rutland	1·9

In these statistics a much wider difference between the two extremes is observed and the death-rate is above the mean for England and Wales (2·7 per 1000) in Berks, Bucks, Wilts, Dorset, Cornwall, Herefordshire, Salop, Derbyshire, Cheshire, Lancashire, West Riding, North Riding, Durham, Northumberland, Cumberland, Monmouthshire, and South Wales. It is below the average in London, Surrey, Kent, Sussex, Hants, Middlesex, Northants, Cambridgeshire, Norfolk, Hunts, Essex, Suffolk, Devon, Staffordshire, Worcestershire, Warwickshire, Leicestershire, Rutland, Notts, East Riding, Westmorland, and North Wales. It will be observed also on examining the figures of the various registration counties that they vary to a considerable extent and thus suggest that the extent and intensity of the causes at work are different at different times and that the accidents of childbirth are, at least to a certain extent, controllable. So far the figures do not prove much but they do show that the mortality from puerperal septic diseases is more evenly distributed than is the mortality from accidents of childbirth and that no diminution has occurred in either case. Both rates are similar in that they are highest in the Welsh and North-Western counties.

Having failed to arrive at any definite conclusion (except that the mortality under each subheading has remained undiminished) by studying the mortality in childbirth during a period of 54 years I now propose to confine my attention to the period of 20 years from 1881 to 1900. This period coincides with the time that has elapsed since the introduction of antiseptics into surgical work, with a period during which great advances have been made in sanitary matters, and with the more reliable certification of the causes of death. (Fig. 1.)

Before 1881 (when the circular letter to medical men already referred to was sent out by the Registrar-General for the first time) it is probable that many deaths in childbirth, especially from the puerperal septic diseases, escaped registration as such. In support of this statement I quote the words of the Registrar-General in his forty-seventh annual report:—

> Out of 453 cases of married women whose deaths were returned in 1884 simply as due to peritonitis or septicæmia, it was found on inquiry that no less than 156 were cases of a puerperal character.

So we may rightly assume that the figures given after 1881 are nearer the truth than are any that appeared before. During this period of 20 years I propose to deal with the mortality in childbirth in the various registration counties of England and Wales, in some large towns, industrial and mining centres, and in some country districts, and to examine more in detail the statistics for Wales, Monmouthshire, Herefordshire, and Salop, and still more in detail the statistics of the various registration divisions of the county of Glamorgan during the same period; for it appears more reasonable to endeavour to arrive at the truth by the method of reasoning from the general to the particular rather than the reverse.

An examination of the figures given below shows that the death-rate per 1000 registered births from puerperal septic diseases range from 3·0 to 1·4 in the various counties.

TABLE VI.—*Mortality from Puerperal Septic Diseases in Registration Counties, 1881–1900 (20 years).*

Lancashire	3·0	Surrey	2·2	Bucks	1·8
North Wales		Warwickshire		Bedfordshire	
South Wales		North Riding		Essex	
		London	2·1	Suffolk	
Cheshire	2·8	Berks			
Westmorland		Middlesex			
Monmouthshire		Cumberland		Cornwall	1·7
West Riding	2·6	Devon	2·0		
Notts	2·5	East Riding		Herts	1·6
Derbyshire		Durham			
Northumberland		Kent	1·9		
Norfolk	2·4	Sussex		Dorset	1·5
Herefordshire		Hants			
		Oxfordshire			
Northants	2·3	Cambridgeshire		Hunts	1·4
Gloucestershire		Wilts		Rutland	
Salop		Somerset			
Staffordshire		Leicestershire			
Worcestershire		Lincolnshire			

FIG. 2.

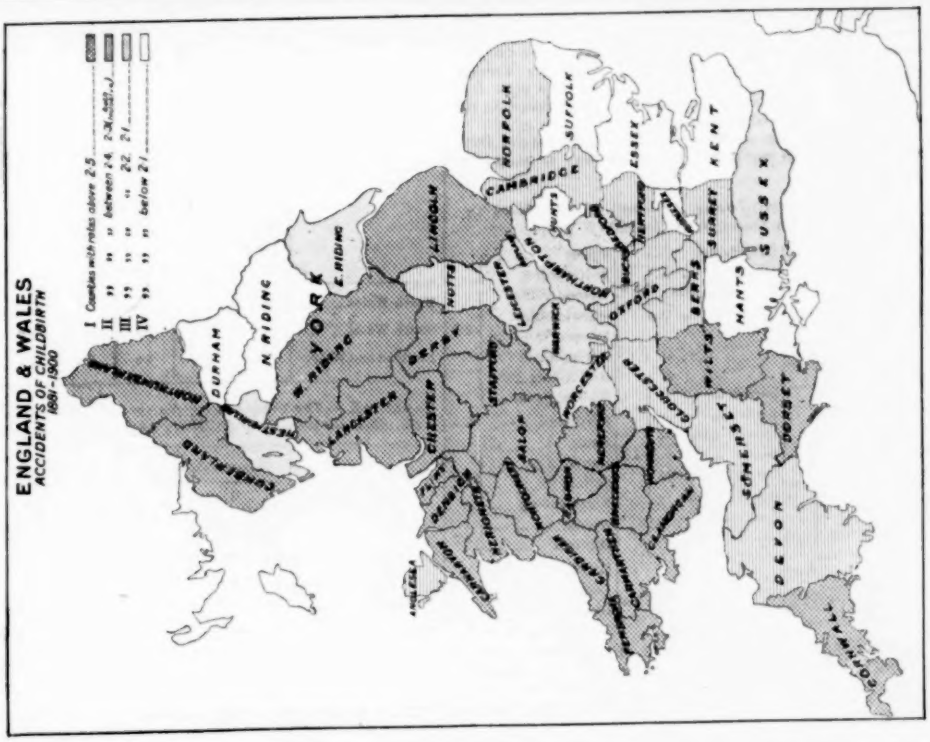
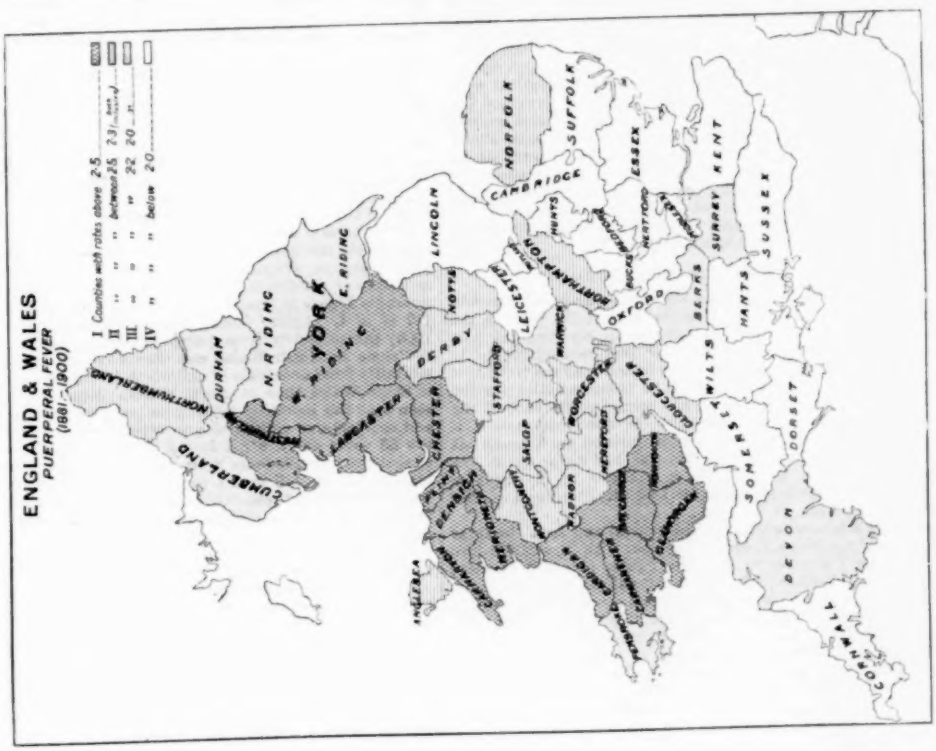

ENGLAND & WALES
ACCIDENTS OF CHILDBIRTH
1881-1900
I Counties with rates above 2·5
II " " " between 2·4 2·3(Mon.)
III " " " " 2·2 2·1
IV " " " below 2·1
NORFOLK
SUFFOLK
CAMBRIDGE
ESSEX
KENT
SUSSEX
SURREY
HANTS
BERKS
WILTS
SOMERSET
DORSET
DEVON
CORNWALL
GLOUCESTER
OXFORD
BUCKS
HERTFORD
NORTHAMPTON
HUNTS
BEDFORD
LINCOLN
NOTTS
LEICES.
RUTLAND
WARWICK
STAFFORD
WORCESTER
SALOP
HEREFORD
MONMOUTH
CHESTER
DERBY
LANCASTER
YORK
E. RIDING
N. RIDING
W. RIDING
DURHAM
NORTHUMBERLAND
CUMBERLAND
WESTMORLAND
FLINT
DENBIGH
MERIONETH
CARNARVON
ANGLESEA
CARDIGAN
RADNOR
BRECON
MONTGOMERY
PEMBROKE
CARMARTHEN
GLAMORGAN

FIG. 1.


ENGLAND & WALES
PUERPERAL FEVER
(1881-1900)
I Counties with rates above 2·5
II " " " between 2·5 2·3(Mon.)
III " " " " 2·2 2·0
IV " " " below 2·0
NORFOLK
SUFFOLK
CAMBRIDGE
ESSEX
KENT
SUSSEX
SURREY
HANTS
BERKS
WILTS
SOMERSET
DORSET
DEVON
CORNWALL
GLOUCESTER
OXFORD
BUCKS
HERTFORD
NORTHAMPTON
HUNTS
BEDFORD
LINCOLN
NOTTS
LEICES.
RUTLAND
WARWICK
STAFFORD
WORCESTER
SALOP
HEREFORD
MONMOUTH
CHESTER
DERBY
LANCASTER
YORK
E. RIDING
N. RIDING
W. RIDING
DURHAM
NORTHUMBERLAND
CUMBERLAND
WESTMORLAND
FLINT
DENBIGH
MERIONETH
CARNARVON
ANGLESEA
CARDIGAN
RADNOR
BRECON
MONTGOMERY
PEMBROKE
CARMARTHEN
GLAMORGAN

The figures in Table VI show that the death-rate was highest in the Welsh, North-Western, Northern, and Yorkshire (West Riding) counties to the west of a line drawn from the mouth of the Tees to the estuary of the Severn. In the first 20 counties in the list the rates were above the average (2·1 per 1000) for England and Wales; in the next four counties they were the same as the mean rate; while in the remainder they were below that rate.

The death rate from accidents of childbirth ranges from 3·3 to 1·7 per 1000 registered births, as may be seen from Table V. (Fig. 2.)

TABLE VII.—*Mortality from Accidents of Childbirth in Registration Counties, 1881–1900 (20 years).*

South Wales	3·3	Oxfordshire	2·4	Sussex	2·2
North Wales		Devon		Bedfordshire	
Cornwall	3·0	Gloucestershire		Worcestershire	
Monmouthshire		Notts		Warwickshire	
Cheshire	2·9			Leicestershire	
Cumberland				Rutlandshire	
				East Riding	
		Surrey	2·3	Westmorland	
Dorset	2·6	Berks		Northants	2·1
Herefordshire		Herts		Kent	2·0
Salop		Bucks		Hants	
Derbyshire		Cambridgeshire		Suffolk	
Lancashire		Norfolk		North Riding	
West Riding		Somerset		Hunts	1·9
Northumberland				Durham	
Wilts				Middlesex	1·8
Staffordshire	2·5	Mean for England and Wales	2·4	Essex	
Lincolnshire				London	1·7

The above figures tend to show that the rate is highest in the Welsh division, in Cornwall, and in all probability in the more agricultural districts of these counties, whereas the rates are lowest in London and in the counties immediately surrounding it.

I now come to consider the statistics of the Welsh counties together with Monmouthshire. I include the latter because one would naturally expect to have very similar figures for this county as for Glamorgan, for the physical and industrial conditions of its western valleys and in the more agricultural portions of the eastern part of it are almost identical with the conditions which obtain in the mining valleys and the agricultural Vale of Glamorgan respectively. I also include the county of Salop of which I have a fair personal knowledge, and although it may be considered as entirely an agricultural county and in this respect similar to several of the Welsh counties, yet its physical features are entirely different. The absence of any high mountains renders it entirely different from most of the agricultural counties of Wales, especially those that border upon it.

WALES, MONMOUTHSHIRE, AND SALOP.

Although the mortality-rates from both puerperal fever and accidents of childbirth seem to be excessively high in the North Wales and South Wales groups of counties yet it is quite possible that these rates are not high throughout the 12 constituent counties, and in order to arrive at the truth it is essential to give figures for each of these counties for the period 1881–1900, the same as has been done for each of the English counties, and unless this is done comparison is impossible. Indeed, it has always puzzled me to make out why it is that the Registrar-General has never given the same prominence to the Welsh counties in his valuable reports as has been given to far less important and smaller English counties.

Having a fair knowledge of the general and local features of each of the Welsh counties, together with Monmouthshire and Salop, I propose to give the figures for each of these counties and further to deal in detail with the various registration districts and large towns in the county of Glamorgan with a view of throwing some light if possible on the conditions of female life and other circumstances which determine these differences. Glamorgan is a typical example of a county where the conditions of life in many of its to-day thickly populated coal-mining valleys were, 30 to 40 years ago or less, those of a purely agricultural and sparsely populated county.

WALES.

The position of North Wales and South Wales as compared with England and Wales, from 1848–1900 and from 1890–1900, will be learnt from the following tables:—

TABLE VIII.—*Mortality in Wales compared with England and Wales.*

—	Deaths per 1000 for 53 years (1848–1900).			Deaths per 1000 for 20 years (1881–1900).		
	Puerperal septic diseases.	Accidents of childbirth.	Childbed (all causes).	Puerperal septic diseases.	Accidents of childbirth.	Childbed (all causes).
North Wales	2·1	2·2	4·3	2·9	3·5	6·4
South Wales	2·2	3·7	5·9	2·8	3·6	6·4
England and Wales	1·8	2·7	4·5	2·1	2·4	4·5

TABLE IX.—*The Comparative Number of Mothers Dying in Childbed for periods of 53 Years and 20 Years respectively.*

—	53 years (1848–1900).			20 years (1881–1900).		
	Puerperal septic diseases.	Accidents of childbirth.	Childbed (all causes).	Puerperal septic diseases.	Accidents of childbirth.	Childbed (all causes).
North Wales	1 in 476	1 in 454	1 in 232	1 in 344	1 in 285	1 in 156
South Wales	1 in 454	1 in 270	1 in 169	1 in 357	1 in 277	1 in 156
England and Wales	1 in 555	1 in 370	1 in 222	1 in 476	1 in 416	1 in 222

That is to say, there died annually from puerperal fever for the period of 53 years one out of 555 mothers confined in England and Wales as compared with one mother in every 476 in North Wales, and one in 454 in South Wales, whilst during the same period there died in England and Wales from the accidents of childbirth one in 370, as compared with one in 454 in North Wales and one in 270 in South Wales during the same period. Again, during 20 years 1881–1900 in England and Wales there died from puerperal fever one in every 476 women confined as compared with one in 344 in North Wales and one in 357 in South Wales, whilst during the same period there died in England and Wales from the accidents of childbirth one in 416, as compared with one in 285 in North Wales and one in 277 in South Wales. It will be further noticed that the mortality from puerperal septic diseases for both these periods is very much the same in the North Wales and the South Wales groups of counties, whereas the mortality from accidents of childbirth for the 53 years (1848–1900) is considerably higher in South Wales than in North Wales, or as 1·7 is to 1. Again, during the period of 20 years (1881–1900) the mortality from puerperal septic diseases is much the same in North Wales and South Wales, whereas the mortality from accidents of childbirth is only slightly higher in South Wales than in North Wales. Moreover, it will be seen that the mortality-rates from puerperal septic diseases and accidents of childbirth are respectively 1·8 and 2·7 for the 53 years and are 2·1 and 2·4 for the 20 years' period, so that the mortality-rate from puerperal septic diseases has increased from 1·8 to 2·1 per 1000 and the mortality rate from accidents of childbirth has diminished from 2·7 to 2·4 per 1000, thus making the total mortality-rate of 4·5 per 1000 the same for both periods.

The following table (Table A.) gives statistical information for each Welsh county for a period of 20 years (1881–1900).

The death-rate from puerperal septic diseases is excessively high in Merionethshire and Cardiganshire, two typical instances of purely agricultural and mountainous districts containing old-fashioned market towns, some fashionable seaside resorts, and the quarry districts of Festiniog and neighbourhood. Denbighshire, Glamorgan, Carnarvon, and Carmarthenshire come next; these may be described as scattered mining and hilly agricultural districts, the most typical mining county being Glamorgan. Brecknockshire,

TABLE X.—*Showing the Annual Death-rate per 1000 from Puerperal Septic Diseases and Accidents of Childbirth in the Welsh Counties during the Period 1881–1900 (20 years).*

Year.	North Wales.											
	Montgomeryshire.		Flintshire.		Denbighshire.		Merionethshire.		Carnarvonshire.		Anglesea.	
	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
1881 ...	1·7	4·1	1·4	2·8	1·7	3·4	2·3	5·1	4·0	4·3	1·1	3·2
1882 ...	6·9	4·6	5·6	4·9	2·0	4·0	2·4	4·8	2·5	2·8	4·0	4·0
1883 ...	2·9	1·9	3·0	2·3	3·2	6·2	2·5	6·0	3·9	2·2	4·4	1·1
1884 ...	4·8	2·8	3·7	1·4	2·4	2·1	2·0	3·1	4·0	3·4	4·1	*Nil.*
1885 ...	4·5	3·0	1·1	0·6	5·0	3·6	5·9	0·5	4·8	5·1	2·1	4·2
1886 ...	0·5	3·5	4·2	2·5	2·7	3·6	3·7	4·2	1·8	3·6	2·1	1·0
1887 ...	1·0	2·6	1·6	0·8	2·1	3·4	6·3	1·6	4·3	1·8	3·2	2·1
1888 ...	3·1	2·6	3·3	4·1	8·0	3·0	6·1	2·8	3·6	1·8	0·0	2·3
1889 ...	1·0	2·1	2·5	1·7	2·5	4·1	2·2	4·4	1·9	2·9	0·0	2·2
1890 ...	1·7	5·3	1·7	2·6	3·6	7·0	2·9	5·2	3·9	6·9	3·7	2·5
1891 ...	1·1	2·2	2·4	4·8	2·0	6·0	4·3	6·7	3·1	4·0	3·3	6·6
1892 ...	1·8	5·9	0·8	5·7	2·6	5·3	4·2	5·4	1·9	4·2	3·5	3·5
1893 ...	2·7	3·2	4·7	0·7	3·2	4·6	4·0	4·5	3·4	3·4	3·2	2·1
1894 ...	4·9	4·9	3·1	3·9	3·9	6·2	5·3	4·7	4·9	4·0	2·4	1·2
1895 ...	1·8	4·2	3·0	2·3	4·1	5·3	4·0	4·6	1·8	4·5	1·0	4·3
1896 ...	3·0	1·8	2·5	3·3	3·2	4·8	2·8	3·4	4·9	4·6	0·0	2·3
1897 ...	4·0	2·0	0·8	2·6	2·4	4·6	8·2	4·7	2·1	5·4	2·3	2·3
1898 ...	1·2	4·8	0·8	4·2	2·6	4·5	2·7	4·3	1·7	3·8	3·3	3·3
1899 ...	1·8	4·8	4·2	5·0	3·5	4·1	3·5	5·2	1·1	4·4	3·3	0·0
1900 ...	1·2	3·7	3·3	3·3	1·8	6·5	3·5	4·7	1·4	3·7	1·1	1·1
Mean for 20 years	2·5	3·5	2·6	2·9	3·1	4·6	3·9	4·2	3·0	3·8	2·4	2·4

A. = Puerperal septic diseases. B. = Accidents of childbirth.

Year.	South Wales.											
	Glamorganshire.		Carmarthenshire.		shire.		Cardiganshire.		Brecknockshire.		Radnorshire.	
	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
1881 ...	4·1	3·0	2·1	2·9	2·7	2·3	2·7	7·1	3·7	5·5	1·7	5·2
1882 ...	3·1	2·5	3·2	3·8	1·9	3·5	3·5	3·5	4·1	2·3	1·9	1·9
1883 ...	2·5	2·9	2·7	2·7	1·5	3·9	5·0	3·3	5·4	2·4	—	3·9
1884 ...	3·0	2·4	2·8	1·7	2·7	2·3	4·2	3·3	0·6	1·2	2·0	6·0
1885 ...	3·2	3·5	1·9	4·4	1·5	4·5	3·4	2·9	2·4	3·0	1·9	3·8
1886 ...	3·5	2·8	3·5	2·1	3·5	2·0	4·3	3·9	1·2	1·2	3·8	1·9
1887 ...	3·3	2·4	4·3	3·4	3·3	2·6	6·6	1·3	5·6	3·7	9·8	0·0
1888 ...	3·8	2·4	3·9	1·9	0·8	1·6	2·6	1·3	4·4	5·1	1·9	3·8
1889 ...	2·1	3·1	3·1	2·9	1·2	2·1	4·9	2·2	1·3	2·6	2·1	2·1
1890 ...	3·1	3·4	3·1	2·5	0·8	3·0	1·4	5·3	3·2	3·9	0·0	6·6
1891 ...	4·1	3·9	1·9	1·3	3·0	3·4	2·9	7·9	1·9	6·3	0·0	0·0
1892 ...	3·3	4·3	3·3	2·4	1·7	3·9	3·3	3·3	3·9	4·5	4·6	4·6
1893 ...	4·8	3·9	5·9	4·3	5·0	2·5	8·9	4·6	1·2	3·6	0·0	10·5
1894 ...	2·3	3·7	3·8	2·7	0·9	3·1	4·4	3·4	2·6	4·6	0·0	6·9
1895 ...	2·2	3·3	2·6	4·2	2·2	4·5	2·0	5·1	2·5	5·0	5·9	11·9
1896 ...	2·7	3·6	2·9	2·6	1·8	3·6	3·6	6·1	3·2	3·9	6·0	5·1
1897 ...	2·4	3·5	1·1	2·7	2·2	6·7	2·0	3·1	1·2	2·5	1·7	0·0
1898 ...	3·2	3·4	1·9	5·9	2·2	4·5	4·0	7·1	1·9	3·1	1·6	0·0
1899 ...	2	3·5	3·1	3·9	0·9	2·7	2·0	4·6	0·6	5·3	0·0	1·7
1900 ...	3·1	3·6	3·6	5·5	1·4	5·7	3·9	4·5	3·9	6·6	1·7	5·3
Mean for 20 years.	3·1	3·2	3·0	3·1	2·0	3·4	3·7	4·1	2·7	3·8	2·3	4·0

A. = Puerperal septic diseases. B. = Accidents of childbirth.

Arranging the counties in the order of their death rates, those with the highest coming first, we get the following results:—

TABLE XI.—*Counties arranged in Order of Death-rates.*

Puerperal septic diseases.		Accidents of childbirth.	
Merioneth	3·9	Denbigh	4·6
Cardigan	3·7	Merioneth	4·2
Denbigh	3·1	Cardigan	4·1
Glamorgan	3·1	Radnor	4·0
Carnarvon	3·0	Carnarvon	3·8
Carmarthen	3·0	Brecknock	3·8
Brecknock	2·7	Montgomery	3·5
Flint	2·6	Pembroke	3·4
Montgomery	2·5	Glamorgan	3·2
Anglesea	2·4	Carmarthen	3·1
Radnor	2·3	Flint	2·9
Pembroke	2·0	Anglesea	2·4
Mean for Wales	2·8	Mean for Wales	3·5
Mean for England and Wales	2·1	Mean for England and Wales	2·4

Flintshire, Montgomeryshire, and Anglesea follow and these may be described as mostly agricultural and flat counties. The death-rate is lowest in Radnorshire and Pembrokeshire, two typical agricultural and somewhat flat counties. The rate for all except Pembrokeshire is above the average for England and Wales. The death rate from accidents of childbirth is highest in Denbighshire, Merionethshire, Cardiganshire, and Radnorshire; then come Carnarvonshire, Brecknockshire, and Montgomeryshire; followed by Pembrokeshire, Glamorgan, Carmarthenshire, Flintshire, and Anglesea. The rate is above that for England and Wales in all the counties except Anglesea, the rate for which county coincides with the general rate.

In the following table the Welsh counties are arranged according to density of population:—

TABLE XII.—*Welsh Counties in order of Density of Population and Death-rates.*

—	Density of population. (Acres to a person.)	Comparative increase or decrease per cent.
Glamorganshire	0·6	+25·1
Flintshire	2·0	+ 5·7
Carnarvonshire	2·9	+ 7·3
Denbighshire	3·4	+10·2
Anglesea	3·4	+ 0·9
Carmarthenshire	4·4	+ 3·6
Pembrokeshire	4·4	− 0·4
Cardiganshire	7·1	− 3·9
Merionethshire	8·7	− 0·1
Montgomeryshire	9·0	− 5·3
Brecknockshire	8·1	+ 5·0
Radnorshire	13·3	+ 6·7
England and Wales	1·2	+12·1

It follows, therefore, that the death-rate from puerperal septic diseases is above the mean (2·1 per 1000) for England and Wales in all the Welsh counties except Pembrokeshire. With respect to accidents of childbirth the death-rate is above the mean except in Anglesea. Glamorgan is the only county that may be termed "densely populated"—i.e., with less than one acre to a person—while the remainder may be termed "sparsely populated."

From a consideration of the above figures it does not seem that the density of population is a factor of much importance in determining puerperal mortality; on the contrary, the mortality from puerperal fever and from accidents of childbirth show a marked tendency to prevail in those counties where the only features in common between them are that they are mountainous, hilly, and sparsely populated,

and that consequently locomotion is tedious and medical assistance is difficult to obtain in time. On the other hand, the mortality seems to be generally lowest in the flatter counties.

I now give the figures for the counties of Monmouth, Salop, and Hereford.

TABLE XIII.—*Showing the Annual Death-rate per 1000 from Puerperal Septic Diseases and Accidents of Childbirth in the Counties of Monmouth, Salop, and Hereford during the Period 1881-1900 (20 years).*

Year.	Monmouthshire.		Salop.		Herefordshire.	
	A.	B.	A.	B.	A.	B.
1881	3·5	2·5	2·0	2·5	2·7	2·7
1882	2·3	2·3	2·4	3·2	4·3	3·3
1883	1·5	2·1	4·2	2·4	2·4	1·9
1884	3·2	2·5	2·1	3·3	3·5	2·8
1885	4·7	2·8	3·6	3·7	3·7	0·9
1886	2·7	0·9	3·9	2·4	0·9	1·5
1887	3·7	1·9	3·1	1·5	3·1	2·3
1888	2·4	2·4	3·3	1·4	2·2	2·5
1889	2·2	2·6	2·0	2·7	0·9	1·0
1890	2·2	3·9	2·5	2·3	1·4	2·9
1891	2·2	4·0	1·4	3·9	0·0	3·6
1892	2·5	3·3	2·0	2·9	3·1	3·4
1893	5·2	4·1	1·5	3·8	4·4	5·1
1894	3·2	3·6	2·3	3·2	1·7	3·0
1895	2·2	3·4	0·8	2·5	2·2	2·2
1896	2·9	4·1	2·5	3·5	2·9	3·6
1897	2·6	3·7	2·1	3·6	3·7	3·0
1898	1·5	3·4	1·8	2·4	1·7	4·2
1899	1·8	3·4	1·9	2·0	3·2	2·4
1900	4·1	4·5	1·6	1·6	1·9	1·9
Mean for 20 years	2·8	3·0	2·3	2·7	2·4	2·7
Mean for England and Wales	2·1	2·4	2·1	2·4	2·1	2·4
Glamorganshire ...	3·1	3·2	3·1	3·2	3·1	3·2

A. = Puerperal septic disease. B. = Accidents of childbirth.

The above figures are what was expected. Those for Monmouthshire as nearly as possible correspond with those for Glamorgan and the physical and industrial conditions of the two counties are almost identical. Again, the figures for Salop and Herefordshire are practically the same and practically also the same as those for the flat and agricultural counties of Wales such as Anglesea, Flintshire, and others. These figures tend to bear out the truth of my former remarks.

THE REGISTRATION COUNTY OF GLAMORGAN.

This registration county had according to the census enumeration of 1901 a population of 866,250, considerably over one half of the population of Wales. It covers 576,537 statute acres. The increase in its population has been phenomenal, as the following figures will show:—

Year.	Population.	Year.	Population.
1801	70,879	1861	317,752
1811	85,069	1871	397,157
1821	120,075	1881	511,433
1831	126,612	1891	687,218
1841	171,188	1901	866,250
1851	231,849		

The county is divided by nature into a northern hilly country, "the Hills," cold, wet, and sterile; and a southern low-lying country, "the Vale of Glamorgan," or the "Garden of Wales," milder in climate and more fertile. The former is severed from the latter by steep slopes where the coal measures crop out in the south of the mineral basin. The hills are mining districts, while the lower grounds, or the Vale of Glamorgan and Gower, are purely agricultural and sparsely populated. The surface of the coalfields may be looked upon as a great plateau with an elevation of from 600 to 1200 or more feet above the sea level and intersected by a series of more or less parallel valleys excavated to a depth of from 500 to 800 feet below its general level and at the bottom of which run rapid streams. The valleys in the eastern region—the Rhymney, the Taff, and their tributaries the Rhonddas and the Cynon—trend, as a general rule, towards the south-east; those of the middle—the Ely, the Ogmore, the Garw, and the Llynvi—to the south; while those of the western region—the Avon, the Neath, the Tawe, and the Loughor—trend towards the south-west. They are generally narrow and deep, opening upon the "Vale" or the Bristol Channel, and they offer great facilities for mining and the carrying away of minerals along the railroads and canals which are constructed along most of them. All the coal-miners are in the hills and their valleys where I shall show that puerperal mortality is exceptionally high.

On analysis Table XIV. shows that the mortality rate from puerperal fever for 1881-1900 exceeds the average for England and Wales very considerably except in the registration districts of Pontardawe, Cardiff, and Gower. (Fig. 3.) The mortality rate from accidents of child-

FIG. 3.

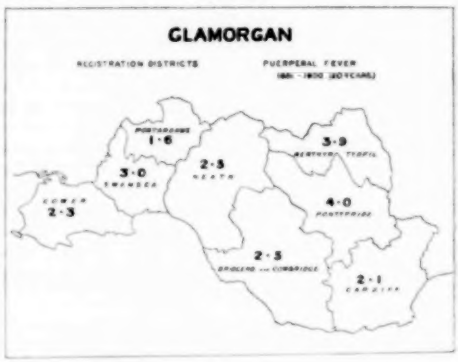
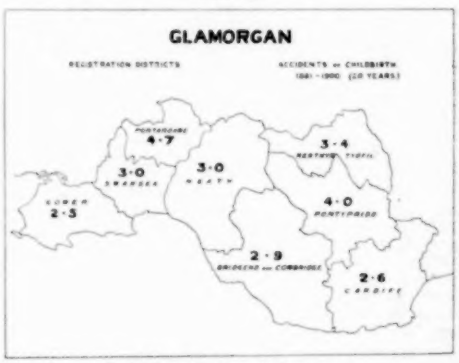


FIG. 4.



Registration districts of Glamorgan.

birth exceeds that for England and Wales in all the registration districts and very considerably so in five of these eight districts. (Fig. 4.) The highest death-rate from puerperal septic diseases occurred in the Pontypridd and Merthyr district and the highest death-rate from accidents of childbirth in Pontardawe and Pontypridd. The figures also for the various years show considerable variations and it is noteworthy that no deaths from puerperal septic diseases occurred in Pontardawe during 1884, 1887, 1889, 1895, and 1896, or in Gower during 1881 and ten consecutive years from 1890. There were no deaths from accidents of childbirth in Pontardawe in 1882 and in Gower during 1883, 1888, 1889, 1890, 1893, 1895, and 1900. Although some 140,000 of the population live in what are termed rural districts it is not more than from 20,000 to

TABLE XIV.—SHOWING THE ANNUAL DEATH-RATE PER 1000 FROM PUERPERAL SEPTIC DISEASES AND ACCIDENTS OF CHILDBIRTH IN THE COUNTY OF GLAMORGAN DURING THE PERIOD 1881–1900 (20 YEARS).

Year.	Registration districts.															
	Cardiff.		Pontypridd.		Merthyr Tydfil.		Bridgend.		Neath.		Pontardawe.		Swansea.		Gower.	
	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
1881 ...	3·2	3·2	6·5	3·6	6·1	3·0	2·2	1·5	2·0	2·0	2·6	6·5	2·9	2·6	0·0	3·0
1882 ...	1·4	2·6	5·7	3·5	2·8	1·9	2·3	3·8	2·4	2·4	1·4	0·0	3·4	2·1	2·7	2·7
1883 ...	1·8	2·0	3·6	3·8	2·5	3·4	0·7	0·0	2·1	2·1	1·4	5·6	3·4	3·7	3·1	0·0
1884 ...	1·2	1·8	4·9	4·0	4·8	3·2	2·1	2·1	2·0	1·0	0·0	2·9	2·6	1·3	3·2	6·4
1885 ...	1·9	4·0	4·4	3·7	4·7	3·1	2·6	3·3	1·6	5·2	2·8	2·8	2·5	2·5	3·2	3·2
1886 ...	2·2	3·3	4·1	3·1	5·9	3·0	2·7	0·7	3·5	2·5	1·4	1·4	2·5	2·2	9·6	3·2
1887 ...	1·8	2·2	5·0	3·9	4·6	1·6	0·7	4·1	3·9	0·5	0·0	1·4	1·0	2·0	6·3	3·1
1888 ...	2·3	1·4	4·6	2·7	5·4	3·5	8·8	3·3	0·5	2·1	2·9	4·3	4·0	2·4	7·4	0·0
1889 ...	1·6	3·0	2·0	3·3	2·7	2·9	3·2	2·0	1·1	2·1	0·0	4·5	2·9	3·6	3·1	0·0
1890 ...	1·7	3·0	4·1	3·8	1·7	4·6	5·4	3·0	3·1	3·6	2·6	2·6	3·9	2·8	8·9	0·0
1891 ...	1·8	3·3	5·1	5·4	6·4	4·3	4·3	4·9	4·6	2·9	1·3	4·1	3·7	2·9	0·0	3·2
1892 ...	2·7	4·1	3·5	5·4	4·7	4·8	8·0	3·1	4·2	2·9	2·4	7·2	4·0	3·9	0·0	3·1
1893 ...	3·3	3·2	5·0	5·2	7·7	2·9	6·5	2·0	5·6	5·6	2·2	12·2	3·3	2·6	0·0	0·0
1894 ...	1·6	2·4	3·3	4·2	4·1	4·3	3·3	2·7	0·0	5·1	1·1	4·6	2·5	3·8	0·0	7·5
1895 ...	1·2	2·6	3·8	3·7	1·6	4·8	1·4	4·2	3·3	3·8	0·0	1·1	2·4	2·1	0·0	0·0
1896 ...	1·7	1·9	4·5	4·2	2·9	4·6	2·4	2·8	2·9	2·1	0·0	4·6	2·3	6·6	0·0	3·3
1897 ...	2·7	2·4	2·0	5·0	2·0	2·7	3·3	4·7	1·2	2·4	3·2	6·6	3·2	2·6	0·0	6·5
1898 ...	3·8	1·6	2·3	3·7	3·8	4·4	3·2	1·8	1·2	3·6	4·2	8·4	4·5	5·0	0·0	3·2
1899 ...	1·8	1·8	2·9	4·3	2·4	4·8	2·4	4·4	3·3	3·3	1·1	5·6	1·3	4·1	0·0	3·1
1900 ...	2·7	3·2	3·5	4·0	2·7	2·0	4·7	5·1	1·6	5·7	3·2	8·5	4·4	3·0	0·0	0·0
—	2·1	2·6	4·0	4·0	3·9	3·4	3·5	2·9	2·5	3·0	1·6	4·7	3·0	3·0	2·3	2·5

A. = puerperal septic diseases. B. = accidents of childbirth.

30,000 that live under true rural circumstances and these are the people of Gower, Vale of Glamorgan, and of the Neath and Pontardawe districts partly. I have no separate figures for the Vale of Glamorgan, which includes portions of several sanitary districts, mixed industrial and agricultural.

The Cardiff registration district has an acreage of 77,655 (0·3 acre to a person) and includes the county borough of Cardiff (estimated population 176,313), Penarth (14,228), and Barry (27,030) urban districts, together with the very extensive rural district of Llandaff and Dinas Powis, which is a scattered industrial and agricultural district with a population of 20,047. Its sanitary condition may be described as satisfactory and confinements are attended generally by medical men and midwives. Trained midwives can be had when required and there is no difficulty whatever in securing medical assistance if and when required except in the more rural portions of it. It has been estimated that over half the confinements of Cardiff have been attended by midwives but no reliable figures can be given, whereas in residential towns within the area, such as Llandaff, Penarth, and Llanishen, nearly all confinements are attended by medical men and trained midwives. In Cardiff there are about 60 or more women who hold themselves out as midwives and practise for gain and the number of midwives for the whole registration district—viz., Cardiff, 60; Barry, 22; Penarth, 6; and Llandaff and Dinas Powis, 9—making a total of about 97. It may be further stated that the district is flat but somewhat undulating and that locomotion is easy. Here the mortality from puerperal septic diseases coincides with that for England and Wales, whilst that from "accidents of childbirth" is somewhat higher.

The Pontypridd registration district has an acreage of 50,457 (0·3 acre to a person) and includes the important urban districts of Pontypridd (population 32,319), Rhondda (122,310), and the rural district of Llantrisant and Llantwit Vardre (11,844). The first and second districts are situated on both sides of the River Taff in its long, narrow, deep, and tortuous valley, bounded on either side by high mountainous ridges. The river now contains but little sewage but a considerable amount of coal-dust, giving it an inky appearance. The water-supply, which is surface-collected and brought from a distance, is satisfactory although occasionally in dry seasons it is short. In both districts there are a few congested localities and in the latter some cellar dwellings. In both cases there is a considerable amount of overcrowding of persons in houses resulting from the habit of taking in lodgers. By far the most insanitary conditions in these districts which have been allowed to remain are the presence along the banks of the river near public roads and dwellings of enormous deposits of decomposing house refuse, and although the authorities concerned have been for many years discussing the advisability of erecting various refuse destructors and other remedies still these exist and continue to emit malodorous and unquestionably dangerous gases. I cannot prove definitely that typhoid or puerperal fever cases can be traced directly to these but I strongly suspect that they act as foci of infectious disease and that those who have the misfortune of living in their vicinity are rendered more susceptible to these diseases. These two districts may be described as essentially mining districts. There is yet another district making up this registration district—viz., Llantrisant and Llantwit Vardre. This contains a few and very old dilapidated villages and a few typical mining localities. Indeed, it may be described as a scattered mining and agricultural area. The water-supplies are satisfactory, the roads are good, and the means of locomotion are sufficient and available. There is no difficulty in obtaining medical aid in a short time. Throughout the registration district by far the majority of confinements are attended by untrained and ignorant midwives and comparatively few are attended by the medical men who are in charge of the various colliery practices. On referring to Table XIV. it will be seen that the average death-rate from puerperal fever and accidents of childbirth are exceedingly high.

The Merthyr Tydfil registration district has an acreage of 65,805 (0·4 acre to a person) and includes the urban districts of Merthyr Tydfil (population 69,228), Aberdare (43,357), Mountain Ash (31,093), and the so-called rural district of Gelligaer and Rhigos (18,169). The district comprises portions of three important mining valleys—viz., the Rhymney, the Taff, and the Cynon, and along each of them runs a river bearing the same name and containing but very little sewage matter. The district of Merthyr Tydfil may be described as containing a large number of congested areas and many very dilapidated back-to-back, back-to-earth, and cellar dwellings, without through ventilation and overcrowded. The outlying localities are in a more satisfactory sanitary condition. The water-supply, which is surface-collected from the Old Red Sandstone, is both good and plentiful. Most of the houses are drained and connected

with the public sewer constructed over 30 years ago. Aberdare is in a fairly good sanitary condition, but here again there are a few congested areas along the river banks and here and there throughout the district will be found some back-to-earth and cellar dwellings without through ventilation. The water-supply is good and plentiful, being surface-collected and obtained from the Old Red Sandstone. Mountain Ash is a typical mining district situated in the same valley as Aberdare. The majority of the houses are of recent construction but there are several insanitary spots where the drains and sewers are defective and neglected. The water-supply, which is surface-collected, is good and plentiful.

Gelligaer and Rhigos district is situated in the Rhymney Valley on one side of the river and contains several typical mining villages, some of which are old. All the centres are sewered or being sewered. The water-supply is short during dry weather. Throughout the whole of this registration district there is no difficulty whatever in summoning medical aid. By far the majority of confinements are attended by unskilled and untrained midwives. On referring to Table XIV. it will be seen that the death-rates from puerperal fever and the accidents of childbirth are excessively high.

The Bridgend registration district has an acreage of 110,571 (1·6 acres to each person) and is situated partly in the Vale of Glamorgan and partly in mining valleys of Mid-Glamorgan. It includes the old market town of Bridgend (population 6063), Cowbridge (1202), a small seaside resort called Porthcawl (1872), an extensive agricultural area, together with the mining districts of Maesteg (15,012) and Ogmore and Garw (19,907). These mining centres are situated in narrow valleys, especially the Garw, where some few years ago puerperal fever was epidemic. In these valleys there occurred an epidemic of this malady in 1892-93. To this I shall refer presently. Bridgend and the valleys above it are now being sewered but the river up to the present has been the sewer of the locality and its condition in all probability was associated with the perennial prevalence of typhoid fever at Bridgend. The water-supply for all these places is fairly satisfactory. The majority of confinements are attended by untrained and unskilled midwives and few only, except in the older towns, by medical men. There is but little difficulty in obtaining skilled medical assistance at short notice. On reference to Table XIV. it will be seen that the mortality from "puerperal septic diseases" is excessively high, while that from "accidents of childbirth" is above the average.

The Neath registration district has an acreage of 87,811 (1·2 acres to a person) and includes the old towns of Neath (population 13,732), Briton Ferry (6961), Aberavon (7553), Margam (9014), Glyncorwg (6450), and Neath rural district (27,343), the last named being mostly rural in character but also containing several mining villages of recent growth. The sanitary condition of Aberavon, Briton Ferry, and Neath is unsatisfactory and there are a large number of courts, alleys, and areas in the two latter which are liable to become flooded and where the houses are overcrowded upon area and with persons. The water-supply is inadequate. The majority of confinements here are attended by unskilled and untrained midwives and there is no difficulty except in the outlying farmhouses in procuring skilled medical assistance at short notice.

Pontardawe registration district has an acreage of 34,000 (1·6 acres per person) and is conterminous with the Pontardawe rural district. It is much smaller in extent and population than the other registration districts, consequently the figures given, although extending over 20 years, are not quite so reliable. It includes several important industrial and mining centres and there are practically in it no congested areas. The water-supply is good and abundant and in nearly all instances the sewage is not stored in cesspools but taken away on land or disposed of otherwise. The death-rate from puerperal fever is below the mean for England and Wales, but that from accidents of childbirth is by far the highest in the county. Indeed, for one year, 1893, it amounted to 12·2 per 1000, in 1900 to 8·5, and in 1898 to 9·4, figures which almost approach those recorded in lying-in hospitals about 100 years ago. I have no explanation to offer for this, for there is no difficulty in procuring skilled medical assistance at short notice. I may mention, however, that many young women are employed at the tinplate works.

The Swansea registration district has an acreage of 36,056 (0·2 acre per person) and comprises the county borough of Swansea (population 95,133) and the scattered mining and agricultural district of Llangyfelach (29,989). The sanitary condition of the rural portion is far from being satisfactory and none of the populous mining centres are sewered. The water-supply is inadequate and unsatisfactory. There are no congested centres and but little overcrowding of persons. The majority of confinements are attended by unskilled and untrained midwives. The death-rates from puerperal fever and accidents of childbirth are considerably above the average.

The Gower registration district has an acreage of 41,110 (3·6 acres to a person) and includes the purely agricultural area of Gower (population 7268) and the small seaside resort of Oystermouth. There are no congested areas and the whole peninsula is a flat but undulating country. There is no difficulty in getting skilled medical assistance at short notice. Midwives attend the majority of confinements.

Below are given similar figures for the county boroughs of Cardiff and Swansea and the urban districts of Merthyr Tydfil and Rhondda, all situated in Glamorganshire in four different registration districts. The figures given extend over ten years.

TABLE XV.—*Showing the Annual Death-rate per 1000 from Puerperal Septic Diseases and Accidents of Childbirth for the County Boroughs of Cardiff and Swansea and the Urban Districts of Rhondda and Merthyr Tydfil during the period 1891-1900 (ten years).*

Year.	Cardiff.		Swansea.		Rhondda.		Merthyr Tydfil.	
	A.	B.	A.	B.	A.	B.	A.	B.
1891	0·06	4·7	3·3	3·0	6·0	Not known.	2·5	5·9
1892	0·0	4·6	1·8	3·1	3·8		3·4	7·2
1893	0·5	3·8	3·6	3·0	4·8		9·3	4·4
1894	0·6	2·1	1·6	5·1	4·5		3·4	3·9
1895	0·18	1·6	1·8	2·4	2·8		3·5	3·9
1896	0·5	2·5	1·9	4·3	4·8		1·2	2·5
1897	0·9	2·0	2·0	2·3	2·4		2·4	2·4
1898	1·6	2·8	2·3	3·4	0·9		1·6	6·0
1899	0·9	2·0	0·3	3·4	3·9		1·6	4·2
1900	0·7	4·7	4·2	2·1	2·0		2·2	3·0
Mean	0·59	3·0	2·2	3·2	3·5		3·1	4·4

A. = puerperal septic diseases. B. = accidents of childbirth.

(To be continued.)

THE LYMPHATICS OF THE LARYNX AND THEIR RELATION TO MALIGNANT DISEASE OF THAT ORGAN.

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Anatomy of the laryngeal lymphatics.—In nearly all text-books on laryngology but scant and imperfect notice is taken of the lymphatics of the larynx and of the subject of their involvement in malignant disease of that organ, yet the matter is one of considerable importance, not only from a pathological point of view but clinically with regard to prognosis, especially prognosis depending on operative treatment. A considerable amount of work has, however, of late been accomplished by anatomists in this field and it is the object of this paper to give an account of the most recent work on the lymphatics of the larynx and to discuss the anatomical facts in their relation to the spread of malignant disease of the larynx to the lymphatic glands. Apparently the first really accurate description of the laryngeal lymphatics was given by Teichmann who particularly drew attention to the distribution of the terminal vessels in the mucous membrane of the larynx. Sappey's (1874) well known researches on the lymphatics completed the description of these vessels and described the general arrangement of the laryngeal lymphatic radicles,

their continuation in the lymphatic channels, and final distribution to the glands. In 1887 Poirier[1] investigated the distribution of these lymphatics and pointed out that whilst most anatomists were agreed as to the presence of two regions in the larynx essentially different as regards the number and importance of the lymphatic vessels, the one supraglottic in the mucous membrane of which there is a rich network of lymphatics, and the other subglottic in which the lymphatics are particularly small and the meshes few, this condition becoming more accentuated as one follows them down towards the trachea, yet the intervening region, that practically of the true vocal cords, had not been adequately investigated.

The results of Poirier's injections of the lymphatics of the larynx may be summed up as follows. 1. As the lymphatic network in a subglottic injection is traced upwards it appears to end abruptly about one millimetre from the free border of the inferior or true vocal cords. 2. In a supraglottic injection the lymphatic system as it invades the superior vocal cords is found also to become altered; though lymphatic radicles traverse the superior cords, still they are found to become more and more attenuated as they reach their free border. 3. The lymphatics of the true vocal cords, although difficult to inject, are found to be present but only in small numbers and of small size. Poirier also found injections of the subglottic region difficult and increasingly difficult the greater the age of the patient. Most of his successful injections were made in larynges taken from children from one to seven years of age. On the rare occasions in which he was able to inject the lymphatics in old people he found the mucous membrane of the larynx much less thick than in children and adults and he concluded that there was a progressive atrophy normally of the lymphatic system in the larynges of old people and that this attenuation and atrophy not only applied to the laryngeal mucous membrane but also to the lymphatic ducts that go to the neighbouring glands. Most (1899) applied in the study of the laryngeal lymphatics the method of Gerota and recently Cunéo[2] has published an article giving his results, his conclusions being based on the results he obtained by injecting several larynges in the same manner as Most and confirming Most's results. I have personally also made some injections of the laryngeal lymphatics by Gerota's method and find that the results substantially agree with those of Poirier, Most, and Cunéo. Gerota's method of injection is as follows. Two grammes of Prussian blue to which three grammes of pure spirit of turpentine have been added are rubbed down in a mortar; 15 grammes of sulphuric ether are added and the whole filtered through a double layer of linen. The solution must be used at once for injection. The injection should be made with a syringe holding from 10 to 20 cubic centimetres. To the end of the syringe is fixed a small adjustment which receives the glass needle for puncturing the tissues. The larger end of the glass needle is wrapped round with a waxed thread to prevent leakage. The point is drawn out in the flame; it must not be too fine or yet too thick. The mixture is injected into the tissues under low pressure only. By this method a much better knowledge of the lymphatics of certain parts of the body unsuitable for injection by mercury has been obtained.

Cunéo's account of the lymphatics of the larynx; the lymphatic radicles.—The lymphatics of the larynx originate in a network that covers the whole of the internal surface of the larynx and is densest where the mucous membrane is thickest. It is divisible into two areas, a superior and inferior. The superior area in which the terminal meshwork is very dense and easy to inject includes all the portion of the laryngeal mucous membrane above the glottis, epiglottis, aryteno-epiglottidean folds, inter-arytenoid region, and superior vocal cords. (In my injections I found an alteration in the number and size of the lymphatic radicles in the superior vocal cords—they became less in number and smaller in size as they approached the free border of the superior cords; these results agree with those of Poirier.) The inferior area includes the mucous membrane of the larynx below the glottis. At this level the network is less dense and in all cases more difficult to inject than that of the superior area. These two areas are relatively independent of one another. They are, as a matter of fact, separated by an intermediary zone formed by the inferior true vocal cords, at which level the lymphatic radicles are even more rare and attenuated, although not entirely absent. At the level of the posterior wall of the larynx the two areas extend without any very clear line of demarcation. If an injection at the level of the inferior true vocal cord be pushed the material injected enters the vessels of the superior network. The lymphatics of one half of the larynx do not communicate with those of the opposite side along the anterior median line but along the posterior median line the intercommunications are very numerous. The infraglottic meshwork is directly continuous with the tracheal network; there is no line of demarcation at all. Similarly the supraglottic meshwork is directly continuous with the network covering the mucous membrane of the pharynx and base of the tongue. The middle group of post lingual vessels receive vessels that come from the anterior surface of the epiglottis itself. All these facts are of importance from the point of view of the local spread of laryngeal carcinoma.

Distribution of the lymphatic channels arising from the lymphatic meshwork.—Each of the two areas has a distinct set of efferent vessels. The trunks arising from the supraglottic network run towards the lateral parts of the epiglottis and ary-epiglottic folds and then pierce the thyro-hyoid membrane at the point of entry of the superior laryngeal artery. After piercing the thyro-hyoid membrane these collecting trunks divide into three sets: an ascending group of one or two in number which cross the hypoglossal nerve and end in a gland situated just below the posterior belly of the digastric muscle; a horizontal group which empties into the glands placed on the internal jugular vein at the level of the bifurcation of the common carotid; and a descending group ending in glands of the same chain at a lower level—namely, the middle part of the lateral lobes of the thyroid gland. Sometimes one or two small glands are found on the thyro-hyoid membrane itself, but they do not apparently receive lymphatics from the larynx itself—their afferent vessels come from the lateral aspects of the pharyngo-larynx.

The efferent vessels of the infraglottic region are divisible into two groups—one anterior, the other posterior. The anterior group (supracricoid) consists of from three to four trunks which pierce the crico-thyroid membrane near the mid-line. Some of these trunks end, according to Poirier, in the prelaryngeal glands, others in a pretracheal gland, and still others in one of the glands of the middle or inferior sterno-mastoid chain (Most). The prelaryngeal and pretracheal glands form part of a chain described as the deep anterior cervical chain (Poirier). This chain consists of three distinct groups or masses of glands. 1. A prelaryngeal lot first noticed by Engel the existence of which has been confirmed by the work of Poirier who found the group present 49 times out of 100. Usually only one gland is present, which in the adult is of about the size of a pea and tends to atrophy in old age. It is found generally in the middle of the V-shaped space formed by the two crico-thyroid muscles, though occasionally it is overlapped by the inner border of one of these muscles. In one out of six cases a second gland of about the size of a pin's head has been found at the level of the top of the V-shaped space. Occasionally a gland is found on the upper edge of the isthmus of the thyroid gland (Mascagni, Most, Roubaud), and rarely a gland in front of the thyroid cartilage close to its anterior border. 2. A prethyroidean mass situated in front of the isthmus of the thyroid; this group is but rarely present. 3. A pretracheal mass usually consisting of one gland of the size of a small pea and situated about one and a quarter centimetres above the sternal notch. There may, however, be more than one pretracheal gland.

The afferent vessels of the prelaryngeal glands are some of the lymphatics of the middle lymphatic pedicle of the larynx and those of the pretracheal come partly from the thyroid body and partly from the prelaryngeal glands. The efferent vessels from the prelaryngeal, prethyroidean, and pretracheal glands empty themselves into the lowermost glands of the sterno-mastoid chain.

The posterior or infracricoid group consists of from three to five trunks which pass over the crico-tracheal fascia at the junction of the lateral and posterior aspects of the trachea. These trunks end in from two to five glands running parallel with the recurrent laryngeal nerve. These glands collect vessels from the thyroid body, the lymphatics of the inferior pedicle of the larynx, and the vessels from the cervical

[1] Bulletins de la Société Anatomique, 1887, 5e série.
[2] Gazette des Hôpitaux, No. 141, 1902.

portion of the trachea and œsophagus. Their efferent vessels end in the lowermost glands of the sterno-mastoid chain and supraclavicular glands and not in the mediastinal glands.

To sum up, the lymphatic channels emanating from the larynx empty themselves into the glands placed under the sterno-mastoid muscles, into the prelaryngeal glands, into the glands accompanying the recurrent laryngeal nerves, and additionally into the supraclavicular glands. The sub-sterno-mastoid group of glands must be considered as the chief set of glands to receive finally the lymphatics of the larynx; the prelaryngeal, pretracheal, and recurrent groups are, as Cunéo remarks, simple glandular points placed as interruptors on the line of the lymph vessels going from the infraglottic area to the deeper group of sterno-mastoid glands.

Application of these anatomical facts to the extension of malignant disease of the larynx by the lymphatics.—In the year 1850 Krishaber divided cases of malignant disease of the larynx into two classes, those of intrinsic and those of extrinsic origin. He applied the term intrinsic to those cases in which the primary site of origin was the true or false vocal cords, the ventricles, or the parts immediately below the true vocal cords (subglottic), and the term extrinsic to tumours arising in connexion with the epiglottis, ary-epiglottic folds, inter-arytenoid space, &c. The reason of this division was a two-fold one—pathological and clinical. He laid down the dictum that "as long as the cancer remains intrinsic there is no glandular enlargement; when it is extrinsic the glands are infected." Schwartz uses practically the same terms—namely, "caviteires et marginaux." Cunéo, however, has quite recently suggested that Krishaber's statement is incorrect and classifies malignant disease of the larynx as supraglottic, infraglottic, and glottic in origin. He believes this division to be scientifically correct and based not only on the arrangement of the laryngeal lymphatics, as already described, but on ascertained clinical facts as regards the tendency to lymphatic involvement. Cunéo considers Krishaber's classification and formula inconvenient "in that it includes under the same heading varieties behaving as regards glandular infection in very different ways. One would have to admit that epitheliomas attacking the superior vocal cords, which are very rich in lymphatics, involve the glands equally late as in epitheliomas attacking the inferior vocal cords, the lymphatics of which are extremely few and ill-developed." He goes on to state that he has seen and collected cases showing that glandular infection occurs early when the superior vocal cords are the site of origin of laryngeal cancer. Accordingly, he suggests the following modification: "Glandular infection is more certain and more extensive in supraglottic cancer than in glottic or subglottic cancers." To my mind Cunéo fails to make out a sufficiently clear case for the abandonment of Krishaber's well-known classification and formula.

Although admitting the anatomical fact that injection of the laryngeal lymphatics shows that the lymphatic network is better marked in the area of the superior vocal cords than in the subglottic and glottic regions of the larynx, yet his statement that clinically there is a tendency to early implication of the glands in cases of carcinoma originating in the superior vocal cords is open to question and is most decidedly not borne out by the experience of most English laryngologists. On the contrary, those who have had most experience of malignant disease of the larynx in this country, such as Semon, Butlin, and others (and these two have had an experience second to none), have found that there is no more tendency to early infection of the glands when the disease originates in the false vocal cords than when attacking the true vocal cords or subglottic space. Is it not possible that Cunéo may be mistaken on this point on account of the undoubted fact that cases of malignant disease originating in the superior vocal cords may not for some length of time give rise to any obvious symptoms and therefore are not apt to come under notice until the disease is much advanced, whereas in malignant disease of the true vocal cords symptoms, especially hoarseness, are apt to be present in the earliest stage? This might easily account for Cunéo's conclusion as to early infection of the glands, for if two cases, one of cancer of the false vocal cords and one of the true vocal cords, were to be seen and diagnosed at the same stage, and that an early one, it would be found that in neither case were the lymphatic glands implicated. No; many years have now elapsed since Krishaber's classification and formula were adopted and clinical experience has only tended to prove that his classification is a correct one and that so long as malignant disease is limited to the interior of the larynx (intrinsic) glandular infection is rare, but that if the external parts of the larynx (extrinsic) be affected early glandular infection is the rule. There seem, therefore, no sufficient grounds at present to abandon Krishaber's division; no useful purpose would be served thereby and only confusion that already exists in abundance rendered worse confusion.

Extrinsic carcinomata all present certain characteristics tending to spread towards the upper opening of the larynx and the lateral parts of the pharyngo-laryngeal region. This progress is rapid and sure when the epiglottis or ary-epiglottic folds are primarily attacked, less so when the arytenoid region is attacked. Although extrinsic carcinoma reaches the final stage of its evolution by invading the extra-laryngeal parts it is particularly at the level of the posterior aspect of the thyro-hyoid membrane that it is liable to show itself externally—i.e., to ulcerate through. Extrinsic carcinoma tends to become arrested, at any rate for some time, in its growth downwards by the true vocal cords. Intrinsic carcinoma attacks most frequently the true vocal cords (29 out of 117 cases—Baratoux; 15 out of 55—B. Fraenkel, Semon), next in frequency the superior or false vocal cords, and lastly the subglottic region. Carcinoma of the true vocal cords is conspicuous by virtue of the slowness of its evolution. It tends to spread at first towards the opposite vocal cord and later to the supraglottic region. Similarly when the superior vocal cords are attacked extension is towards the supraglottic region.

Subglottic carcinomata are rare; out of 486 cases Sendziak only collected five. They tend to spread downwards and invade the trachea. Their growth upwards is usually checked by the true vocal cords, although in a case observed by Cunéo the true vocal cords were invaded, the parts above, however, being quite free. With the exception of malignant disease originating in the epiglottis or arytenoid region the disease tends to remain limited at its commencement to one-half of the larynx. Sooner or later, however, the neoplasm tends to attack the opposite side. A few cases have been reported in which the opposite side has become affected by contact, but usually it is by direct continuous invasion. This most often occurs at the level of the posterior aspect of the larynx, although it has been observed to invade the opposite cord through the anterior commissure (Semon). The distribution of the lymphatics can to a great extent explain these different particulars in the local extension of cancer of the larynx.

The arrest for a long time of growths reaching to the inferior true vocal cords is the result of the attenuation of, and diminution in the number of, the lymphatics at this point. In extending towards the superior laryngeal orifice and lateral aspects of the larynx extrinsic carcinoma only obeys the general law observable in the extension of all epitheliomas—namely, a preference to follow the course of the lymphatic stream. The connexion of the lingual lymphatics with those originating on the anterior aspect of the epiglottis explains the tendency to extension of malignant disease of the epiglottis to the base of the tongue. The continuity of the subglottic meshwork with that of the trachea equally accounts for the extension of subglottic cancer towards the trachea. The small number and ill-developed condition of the lymphatics of the inferior vocal cords account mainly for the slow evolution of epithelioma attacking that region. Finally, the relative independence of the lymphatics of each half of the larynx accounts for the non-involvement of the opposite side of that organ for a period at all events more or less lengthy.

Like all epitheliomata cancer of the larynx tends eventually to invade the lymphatic glands; in fact, it is the rule in late cases. Schleier has noticed it 20 times out of 125 cases and Sendziak notes 54 cases out of 486. It is only fair, however, to say that other observers give a much higher percentage—Jurasz nine out of 21 and Schwartz 13 out of 28 cases. At the same time lymphatic infection is fairly rare if the growth be limited to the true or false vocal cords, particularly to the anterior two-thirds of the true cords. It is also uncommon in cases of subglottic origin. It is well to remember, as pointed out by Cunéo, that enlargement of the glands in a case of epithelioma of the larynx does not necessarily mean malignant infection. The enlargement may be due to septic infection from a septic malignant ulcer or to some septic lesion of the pharynx. Much more attention should be given in all cases of post-mortem examinations performed on patients dying from malignant

disease of the larynx to the microscopic examination of the neighbouring lymphatic glands; in two cases lately under my care, both advanced cases of intrinsic carcinoma and in which ante mortem no infection of the glands could be made out, post-mortem examination microscopically of the cervical glands gave no evidence of secondary infection.

In cases of epithelioma of the epiglottis and ary-epiglottic folds very early glandular infection is the rule. I have seen most extensive masses of fixed hard glands in such cases. The fact, nevertheless, remains that in many cases (intrinsic) glandular involvement occurs relatively late. Cunéo mentions several causes to explain this early immunity of the glands. First of all he points out that the major number of laryngeal carcinomata are squamous epithelioma (248 cases out of 486—Sendziak) and he goes on to state that it is well known that this variety of growth generally attacks the glands somewhat late. This, however, is certainly incorrect; for instance, in epithelioma attacking the tongue or tonsil very early and extensive implication of the glands is the rule. Again, he thinks cancer of the larynx tends frequently to become pedunculated and to grow into the cavity of the larynx without extending much beyond the border of its base of origin and points out that pedunculated cancers growing into a cavity do not as a rule invade the glands until a very late stage, a good example being papillary carcinoma of the bladder.

Whilst admitting that occasionally laryngeal epithelioma is pedunculated and may possibly for this reason not invade the glands until a late stage, yet in my experience it is exceptional to come across a case of laryngeal epithelioma that is pedunculated. Usually the neoplasm is sessile with a broad base of origin and much infiltration. The only rational explanation seems to me to lie in the distribution of the lymphatic meshwork of the larynx; if certain parts, such as the epiglottis and ary-epiglottic folds, are very rich in lymphatics and consequent glandular infection is both certain and early in appearing, it is seen that in other parts, such as the subglottic and less so the false vocal cords, the lymphatic meshwork is much less developed and that on the true vocal cords, one of the sites of election for epithelioma, the lymphatics are so few in number that their injection is a matter of considerable difficulty. In epithelioma attacking these parts glandular infection is as late in appearing as it is early when attacking the epiglottis or ary-epiglottic folds.

Distribution of glandular infection.—Bearing in mind the anatomical description of the glands already given one would expect infection to show itself in three groups of glands—the substerno-mastoid, the prelaryngo-tracheal, and the recurrent laryngeal. As a matter of fact all the glands included between the posterior belly of the digastric and the clavicle may become infected in cases of laryngeal cancer. There is nothing especially characteristic in their mode of invasion. Infection of the prelaryngo-tracheal glands is decidedly rare although Most has collected a few cases. Similarly only a few cases are on record of infection of the recurrent group (Juraz, Fraenkel, Bergeat, Manver, and Most). In all the verification has been post mortem, as malignant disease of these glands owing to their small size and depth cannot be recognised clinically. The order in which the glands become infected varies according to the site of origin of the growth. If of extrinsic origin it is particularly likely to occur in the upper group of glands of the sterno-mastoid chain, and if subglottic in the lower group. As a rule the gland which is first found to be enlarged and that is most often met with in intrinsic carcinoma is placed at the level of the anterior border of the sterno-mastoid muscle about the height of the space which separates the hyoid bone from the thyroid cartilage (Schwartz). So long as the disease remains limited to one-half of the larynx glandular infection occurs only on the affected side. Most and Roubaud were unable to find a single case in which a unilateral laryngeal cancer had caused involvement of the glands on both sides. This is in strict accordance with the results of experimental research and of the pathological anatomy of the parts, for it has been already pointed out that an injection of the lymphatic meshwork of one half of the larynx, though occasionally able to cross the mid-line, never penetrates the lymphatic radicles of the opposite side. When, however, cancer attacks the mid-portions of the epiglottis or cricoid plate glandular infection on both sides of the neck may occur.

These particular points in the pathological anatomy of cancer of the larynx carry certain practical deductions. Firstly, in early intrinsic carcinoma of the larynx of limited extent the disease can most thoroughly be dealt with by the operation of thyrotomy (or laryngo-fissure). It is very necessary, however, to bear in mind two important points with regard to this operation: (1) that the disease is frequently more extensive than the laryngeal picture has shown it to be and therefore the consent of the patient must be obtained to go further if at the time of the operation it is deemed necessary and to perform unilateral laryngectomy; and (2) that the fact of having to remove *small* portions of the cartilages of the interior of the larynx as well as the affected soft parts does not justify the operation being called a "partial extirpation of the larynx" in contradistinction to the term thyrotomy. As Semon has pointed out, the difference between a real partial—that is to say, a complete or nearly complete—removal of one-half of the larynx and a thyrotomy with extraction of a small piece of the cartilaginous framework is so great, owing not only to the much more extensive nature of the operation for partial laryngectomy but also to the nature and technique of the after treatment and dangers of complication, that the imaginary difference between a thyrotomy with simple extraction of the soft parts and a thyrotomy in which in addition to the extraction of the soft parts an insignificant piece of cartilage has also to be removed is ridiculous. Such cases must be reckoned in the category of simple thyrotomies. Secondly, in cases of extrinsic carcinoma or of intrinsic too extensive to be dealt with by thyrotomy the tendency of the disease to remain limited for a certain length of time to one half of the larynx justifies the performance of unilateral laryngectomy. The question as to the advisability of excising the neighbouring glands is one of great importance and unfortunately there is a considerable divergence of opinion on the matter. Out of notes of 298 partial or complete laryngectomies collected by Sendziak extirpation of the glands is only mentioned 25 times, a percentage of 8. Cunéo whilst admitting the tendency to comparatively late invasion of the glands and the rarity of recurrence in the glands (five cases out of 110 partial and seven out of 188 total laryngectomies) considers this proportion—i.e., 4·5 per cent. in the former and 3·9 per cent. in the latter—sufficient to justify the systematic extirpation of the set of glands liable to infection in all cases of laryngeal cancer, whether enlarged or not. The operative results of English laryngologists do not warrant the recommendation to extirpate in all and every case of malignant disease the set of glands liable to infection.

The whole question seems to me to turn on two main points: (1) the site of origin of the disease; and (2) the stage in which the disease is diagnosed. If an epithelioma of the larynx of strictly intrinsic origin is seen and diagnosed in an early stage and whilst therefore it is of limited origin the operation of thyrotomy as carried out in this country by Butlin, Semon, and others is amply sufficient to eradicate the disease. In the absence of obvious glandular involvement experience has shown that there is no need to perform a set operation to remove the group of glands liable to infection. Both Butlin and Semon, who are warm advocates of the operation of thyrotomy for early intrinsic carcinoma of the larynx, have had most brilliant results—results unequalled in the surgery of cancer in other parts of the body. For instance, if one takes Semon's cases operated on by him between June, 1891, and July, 1898 we find he performed thyrotomy on 12 patients. Ten of these 12 patients have been completely and lastingly cured—a percentage amounting to 83 3. In none of these cases was it deemed necessary to extirpate any glands. On the other hand, in much advanced cases of intrinsic cancer of the larynx which necessitate removal of one-half of the larynx the corresponding glands should be removed whether they are felt to be enlarged or not. Also, in any given case of extrinsic origin, bearing in mind the certainty of early involvement of the glands, a set operation for their removal, whether enlarged or not, should always be the routine practice.

To sum up briefly this question one would agree with Cunéo that extirpation of the group of glands liable to infection should be systematically carried out in all cases of malignant disease of the larynx with the exception of those cases of intrinsic origin which are seen early, are of limited extent, and in which there is no clinical evidence of glandular infiltration.

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ON THE ETIOLOGY OF SCURVY.[1]

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As I have not dealt at all fully with the clinical aspect of the cases referred to in this paper I may perhaps state here that they conformed in every particular to what, I take it, would be regarded as typical scurvy. As to this no question has been raised, but I make the statement with the view of clearing up any doubts which may arise on this point. Briefly the subjects of these cases presented during life spongy bleeding gums, lassitude, anæmia, and breathlessness on exertion, followed later by lameness associated with synovitis in the joints, and hæmorrhages with brawny indurated swellings in one or both of the lower limbs. The urine was slightly acid. The blood showed marked poikilocytosis in the red discs. There were no nervous lesions. Death took place from cardiac failure usually and post mortem the blood was fluid; there were subserous, submucous, subpleural petechiæ. The heart was thin and pale, the right side being dilated, and there was excess of serous fluid in the pericardium. The body was well nourished.

Further, I wish to explain my attitude in the matter. I have approached the subject with a perfectly open mind and before this Transvaal experience I had no special acquaintance with scurvy. After studying this outbreak I endeavoured to explain it by the current views as to the causation of the disease but failed. I am therefore venturing to submit this thesis to the judgment of the society. I would ask you to approach the subject *de novo*, with open minds, setting aside for the present all historical writings and sayings on the matter, treating this outbreak of the disease as an entity, and in particular bearing in mind the fact that the question of the antiscorbutic value of any food is not being raised. I propose to lay before you some evidence pointing to the fact that the condition known as scurvy in adults is not brought about by the absence of any particular kind of food from the dietary but is more probably a specific infection of bacterial origin.

Towards the close of the Boer war, in May, 1902, there was presented the unusual spectacle in the Transvaal and Orange River colonies of lands devastated by fire, devoid of farms, of crops, and of cattle, with the entire human population—natives and Europeans, combatants and non-combatants—gathered together into a series of small communities or units, of fixed location and definite occupation, under supreme military control. Each of these units was supplied by the military authorities with food, this food being mainly imported from over sea and transported up country along closely guarded railway tracks. Thus every individual in every community was definitely rationed. Except in the few towns that still remained undestroyed it was found impossible to obtain food of any description save that imported. For the inhabitants remaining in these undestroyed towns there were provision stores which supplied goods at fixed prices and in definite quantities only. The shops, the inhabitants, and their houses were under close military supervision by day and night. Solely for the use of the military classes there were instituted the field-force canteens which supplied additional articles of food on payment. These canteens, though private ventures, were also under military control, and the demand from them by the troops for goods was nearly always in excess of their power to supply. The goods sold at these canteens were principally imported preserved foods and thus all in British military employ were enabled in some measure to supplement their regular rations. All other classes were dependent entirely on the Government for rations; and about this period every individual in the country could, with some degree of certainty, be accounted for officially as to dwelling place, employment, and amount and nature of food consumed. From the military organisation of affairs and division of the inhabitants into units no individual non-combatant could fare better or worse in his food-supply than the remaining members of his own unit. Thus all burgher camp inhabitants participated equally in the general food supply for the burgher camp population and so with the natives attached to the British army and the regular European troops. For each of them as a class there was a definite food-supply per individual, based on the general stores of food in the country and issued under the control of the military authorities. Sometimes the burgher camp population fared better than the troops; at other times the positions were reversed.

The evidence supporting the contention that scurvy is caused by a specific infection is derived from two sources—viz., the study of the epidemic behaviour of the disease and the study of its clinical features. The incidence of scurvy in the Eastern Transvaal will be considered in the following units: (1) the burgher concentration camps; (2) the European soldiers; (3) African natives attached to the British army; and (4) African natives attached to the civilian Repatriation Department.

1. *The burgher concentration camps.*—The burgher camps under special observation were those situated at Middelberg, Standerton, and Volkrust. Each camp numbered about 5000 inhabitants, of whom 48 per cent. were children under 12 years of age. The remainder were classed as adults, male and female, and were in the proportion of 1 to 3. The inhabitants lived in tents which were regularly arranged at wide intervals on sloping, well-drained soil, and each camp possessed its own internal medical and educational organisations. Every camp was surrounded by barbed-wire fencing and was closely guarded, and as ingress and egress were privileges subject to military control each camp was in a sense an open prison. No food could reach the camps or be distributed to the inhabitants except with official sanction. A definite scale of food, varying with the age of the individual, was laid down and rigorously adhered to. In each camp were separate quarters for the native camp inhabitants. These natives, who likewise had fixed rations, acted chiefly as servants to the members of the camp staffs and to the Dutch inhabitants. They averaged 150 per 5000 whites.

The incidence of scurvy at the burgher camps, considered in detail, was as follows. In the camp at Standerton, between March, 1901, and January, 1903, there were no cases of scurvy. In the camp at Volkrust, similar in every respect to that at Standerton and over a similar period, there were no cases of scurvy. In the camp at Middelberg, which was slightly larger than that at Standerton, there were 100 cases among Europeans and one case among natives over a similar period. This outbreak of scurvy among adults at Middelberg, which occurred during December, 1901, and January, 1902, under a dietary similar in all respects to that in use at the camps at Standerton and Volkrust, immediately lends colour to the suggestion that the cause of scurvy is to be found in conditions other than those usually associated with food. The inhabitants of these camps had no occupation other than their domestic duties.

2. *The European soldiers.*—The district under inspection as to the prevalence of scurvy among Europeans in British military employ was that of Standerton. All the sick within a radius of 40 miles were received into No. 17 General Hospital. This hospital had advanced up country through Natal with General Buller's army, being known as No. 4 Stationary Hospital, and finally found a resting place at Standerton as No. 17 General Hospital. It comprised 600 beds for Europeans and a variable number—from 30 to 70—for natives in military employ. Between December, 1899, and January, 1903, 22,000 European patients were admitted. This number included 100 sick Boer prisoners of war, 40 sailors of the Royal Navy, and 160 civilians in Government employment. There was not a single case of scurvy among these admissions. Between March, 1902, and February, 1903, 3000 soldiers around Standerton were examined while at their duties and only one was found to be affected with scurvy. This was a private on detached duty, living with, and having charge of, the transport section of the Native Sanitary Corps, and to his case further reference will be made subsequently. Scurvy, therefore, with this single exception was non-existent among European troops and Europeans in military employ in and around Standerton.

3. *African natives attached to the British Army.*—With regard to the natives in military employ in and around Standerton the evidence is derived from two sources: the statistics of the native Military Hospital attached to No. 17 General Hospital and a repeated examination of the natives in military employ in the Standerton district. Examination of the hospital record of admissions of natives shows that

[1] A paper read before the Epidemiological Society of London on Feb. 19th, 1904.

the first case of scurvy admitted occurred in November, 1901. This was the first out of a total of 300 admissions for all causes. Among these 300, however, were 18 cases admitted for indefinite symptoms, such as debility, rheumatism, inflamed connective tissue, and periostitis. These may possibly have been cases of scurvy. No further cases of scurvy were admitted between November, 1901, and April, 1902. In May, the last month of the war, eight cases of scurvy were admitted, six from the Army Service Corps Transport Section on May 1st and two from the Sick Horse and Remount Depôts a few days later. In addition there were 27 cases, diagnosable by their symptoms only, of the character above mentioned. The total admissions to hospital from all causes between November, 1901, and May 31st, 1902, were 390. Definite scurvy, therefore, formed 2 per cent. of the total admissions and doubtful scurvy 7 per cent. Between June 1st and Sept. 30th, 1902, there were 193 admissions, including 22 cases of definite scurvy and 20 doubtful cases, i.e., 11 per cent. and 10 per cent. respectively of total admissions. The last period noted is from October, 1902, to February, 1903. The total admissions numbered 86. Of these, scurvy accounted for 24, and there was one doubtful case. Definite scurvy, therefore, formed 28½ per cent. of all cases admitted during this period.

The following is a summary of the foregoing facts. Between January, 1901, and February, 1903, 970 natives were admitted to the Military Hospital. Before May, 1902, definite scurvy was practically absent. During this month, after a total admission of 600 patients, eight definite cases of the disease occurred and were admitted to hospital. From this month onward until Feb. 7th, 1903, the prevalence of scurvy among the hospital admissions gradually increased from 2 per cent. to 28½ per cent. At the same time the total admissions for dysentery, diarrhœa, and enteric fever fell considerably and the monthly admissions fell from an average of 57 to 21. It is to be remarked that this notable increase in the percentage of admissions of scurvy cases occurred on the cessation of hostilities when the natives and troops to whom they were attached became stationary and concentrated in fixed camps in and around Standerton. It is of further importance to note that during the latter portion of the period under consideration when scurvy was most prevalent all restrictions in food had been withdrawn, and also all cases admitted came from units stationed in Standerton town.

Such is the information gleaned from the hospital statistics. The increasing proportion of scurvy cases admitted to the native military hospital led to a general inspection of all natives in military employ in and around Standerton. The men were examined in their own quarters while on duty. Outside Standerton, between March and July, 1902, before the troops and attached natives were concentrated in the towns, no signs of scurvy were found. After the concentration in Standerton natives were again examined and the following results obtained. Those inspected were of two classes, the labourers and the mule-drivers. The labourers were divided into the Native Labour Corps and the Native Sanitary Corps. In the Native Labour Corps there were 117 men employed and 16 per cent. were affected. In the Native Sanitary Corps 37 men were employed and 76 per cent. were affected. The mule-drivers were all attached nominally to regular regiments or corps. The following is a brief statement of the incidence of scurvy among them. Attached to pom-pom section, ten men; none affected. Attached to mounted troops, 67 men; 22 per cent. affected. Attached to Army Service Corps, Transport Section, 400 men; 32 per cent. affected. Detachment in charge of officers' carts, Army Service Corps, nine men; none affected. Detachment employed as police in Army Service Corps camp, eight men; four affected. To return to a consideration of the Native Labour Corps and the Native Sanitary Corps, these two units received exactly the same rations, which consisted of mealie meal 2¼ pounds daily and meat 1 pound weekly. The Native Labour Corps had 16 per cent. affected; their work was that of heavy goods porterage at the railway station. On the other hand, the Native Sanitary Corps had 76 per cent. affected and their work was that of gathering together the carcasses of animals that had died during the war around Standerton and burying them in pits. The eight men who were occupied in transporting the carcasses by mule wagons to the burial pits were every one of them affected with scurvy, as was also the European soldier in charge of this transport party. This is the case referred to previously as the only European found affected with scurvy at Standerton. His food was the same as that of the other soldiers at Standerton and was totally different from the food of the natives of the Native Sanitary Corps. Although he was granted the use of a separate tent, which stood side by side with those occupied by the Native Sanitary Corps natives, he, however, spent the whole of his leisure time with these natives and associated intimately with them. The natives of this corps had been recruited but three months previously, direct from their homes and had come in perfect health. It is a noteworthy fact that the head native of this gang occupied, with his family of six, a tent a short distance apart from the other natives and although their diet was similar to that of the corps none of them were affected with scurvy. The greater cleanliness of this head native's tent, as compared with the others, was also striking.

The marked contrast in the prevalence of scurvy in these two units—namely, 76 per cent. in the scavengers and 16 per cent. in the porters—under precisely the same dietary, again points to a factor other than food as the prime cause of the disease. Nor can that factor be entirely the unwholesomeness of the work of the Native Sanitary Corps because other diseases due to insanitary conditions, such as diarrhœa, were markedly absent. It may be further mentioned that although these two units, the scavengers and the porters, occupied separate quarters within a few hundred yards of one another, they were practically on one inclosed piece of land.

Next with regard to the mule-drivers. Their food was exactly the same as that of the ordinary European soldiers with the exception of the lime juice ration. The cavalry, artillery, and pom-pom section natives lived in tents in the same camps as the European cavalry and artillery. Their surroundings were therefore comparatively cleanly and the incidence of scurvy varied from total absence in the pom-pom section to 22 per cent. in the cavalry natives. On the other hand, the natives of the Army Service Corps, who lived in a large encampment by themselves and whose tents were uncleanly and compared unfavourably with those of the cavalry and artillery natives, had 32 per cent. affected. Of the 400 men examined belonging to this division 200 were leaving for their homes on the following day, their contract period of service having expired. They complained of feeling too ill to work and refused to sign afresh any contracts for further employment. Quite one-half of this number were suffering from scurvy. It will be said, however, that the regular troops were supplied with lime-juice but not the natives. It may be pointed out, in return, that lime-juice was offered to all military natives in December, 1902, and the prevalence of scurvy was greatest in 1903. It must further be stated that the lime-juice was left severely alone by nine out of every ten men, troops and natives alike. This raw lime-juice was too acrid, too raw, and gave severe colic to many. It could not possibly be drunk without sugar and sugar was too valuable for other purposes to be taken to improve extremely unpalatable lime-juice. The ultimate result was that the natives attached to these corps and living with them had precisely the same dieting as the English troops. Still only the natives were found affected by scurvy and that corps of natives (the Army Service Corps) was most affected whose camp was most unclean and least under direct military supervision.

Here, again, proof seems to be wanting that the food factor is the cause of scurvy. In this connexion, further, the condition of affairs in the 19th Hussars is interesting. One squadron of the 670 Europeans forming the regiment were buying fresh vegetables regularly in addition to their ordinary rations. The remaining two squadrons subsisted on the rations issued; there was no sign of scurvy in either section.

4. *African natives attached to the civilian Repatriation Department.*—The last unit in which inquiry was made as to the incidence of scurvy comprised 900 natives of Africa employed as drivers and leaders of mules by the Repatriation Department—a civilian organisation inaugurated on the cessation of hostilties. The sick of this corps were treated at the hospital in the burgher camp, Standerton, when too ill to look after themselves; but when merely unable to work were kept in sick detention tents close by their regular quarters. Between August, 1902, and February, 1903, the department being in full working order, 80 cases of all diseases were admitted to the hospital. Of these 50—i.e., 62 per cent.—were cases of scurvy. In February, 1903, a final

inspection of the natives of this department was made. Of the 900 employed 500 were examined and 252 were found to be affected—i.e., 50 per cent. Of the 14 cases in hospital 12 were scurvy; of the 14 in the sick detention tents 12 were scurvy. In connexion with this inspection the diagnosis of the cases was confirmed by the senior medical officer of the burgher camp, Standerton (Dr. Alexander).

Again, the feature to be noted is that the food of these natives was quite as plentiful (in some respects more so) as that supplied to the natives under military control; but, on the other hand, their camp was the least tidy and cleanly of all at Standerton. The tents were overcrowded, closely packed together, and arranged with a total disregard for sanitation. The area of this camp, containing 900 men, was only one third in extent of that occupied by the Scottish Rifles who numbered 500. The statistics of the sick in detention tents were not kept or the tale would have appeared heavier. Although the natives of the Repatriation Department did not outnumber by any means the natives in military employ the incidence of scurvy amongst them was the heaviest of all native units at Standerton. A consideration of this fact, then, that this body of natives with the best and most liberal food-supply in the town had the heaviest incidence of scurvy again points to the conclusion that food as a factor in the production of the disease must be eliminated.

Further evidence against food being the prime cause of the condition is afforded by clinical study of the cases—more especially by consideration of the mode of onset and the results of treatment. All these cases of scurvy commenced as an inflammation of the gums and the general symptoms followed at varying intervals but always secondarily to the gum condition. Improvement or the reverse followed *pari passu* with improvement or aggravation of the gum condition. This inflammation of the gums occurred in all cases without exception and in a definite manner. The process was as follows. Around the tooth and next to the gum was first noticed a collection of food. The gum edge nearest this aggregation soon became of a deeper red tint. This deeper tint area spread rapidly, but in the early stage was always separated from the healthy gum by a definite violet-mauve demarcation line. In a few days the whole of the gums, both internally and externally, became involved in the inflammatory process and areas devoid of teeth which had hitherto been healthy were now affected. At this stage the affected tissues were deep red in colour, soft, swollen, and compressible, tender, and bled easily on pressure. In a day or so the gums became easily separable from the teeth, and deep down, between the gums and the teeth, definite masses of a cream-cheesy consistency and colour could be seen and removed. These masses on microscopic examination were found to consist of pus cells, numerous micro organisms of various kinds, and food débris. At this stage there were no constitutional symptoms nor could any changes be detected in the cardio-vascular system. These conditions developed later at varying intervals and it was found that they did not develop when means were adopted to improve the gum condition. Moreover, in cases in which the general disturbance was present there could be no ultimate recovery without a prior return of the gum condition to the normal. The method of treatment adopted, therefore, consisted of rest in the open air, isolation from previous surroundings, coupled with rigorous and frequent mouth antisepsis, care being taken to remove the cheesy masses mentioned above. The rate of general improvement and return of the gums to the normal condition was in direct proportion to the amount and efficiency of the antiseptic treatment employed for the mouth.

The fact that these cases when seen early could be completely cured by this treatment alone—with, be it noted, no alteration of any sort in the diet—argues directly against the diet being the prime cause of the condition. Further, the value of local treatment for the mouth condition is emphasised by a comparison of the results of treatment in advanced cases by (1) local *plus* constitutional treatment; and (2) by constitutional treatment alone. For local *plus* constitutional treatment the average length of residence in hospital was from 20 to 30 days, but for constitutional treatment alone it was from 60 to 90 days. It is also interesting to note that in advanced cases in which mouth antisepsis was employed there was little or no pyrexia, but that periods of pyrexia were a feature of similar cases in which this treatment was omitted.

These clinical facts, therefore, seem to suggest that the condition is not due to the food but is one caused by an infection through the gums and mouth. Whether the system is infected directly through the gums or through the swallowed saliva after the gum condition has developed cannot readily be determined.

Further, that the condition was found to prevail only among natives concentrated at Standerton, and then only in direct proportion to the absence of discipline and European habits of cleanliness, points to the fact that the unchecked habits of natives must in some measure either account for, or at least increase, the liability to the disease. The natives seldom used soap and rarely did they wash their hands or faces, and a large proportion, though they wore little or no clothing, were extremely verminous. This clothing was second-hand and usually consisted of one or more cast-off European garments which were very filthy and but seldom washed. They rarely washed their blankets and never swept out their tents. They had common eating and drinking utensils and frequently several ate out of one dish at the same time. Though dental caries is less common among them than among Europeans they rarely washed out their mouths. The majority of the natives chewed tobacco, "black cavendish" being easily obtainable through the troops, and not infrequently they passed the half-chewed "quids" from one to the other for further use. With this chewing there was expectoration free and plentiful—a habit found impossible to repress. Then they used mouth-organs and similar instruments in profusion, passing them from one to the other. They left both half-eaten food and food in preparation lying about on the ground inside and outside their tents. Moreover, the tents were always in use and crowded during their off-duty time. Altogether these habits formed an excellent basis for the conveyance of any mouth-to-mouth infection.

To sum up—

1. The outbreak at the burgher camp, Middelberg, among Europeans and natives, was attributed to the nature of the food supplied. It was noticeable that the European sufferers consisted mainly of those persons who from advancing years were unable to fend for themselves, and of those who, suffering from mental depression at the prolonged separation from relatives, neglected to obey even the ordinary rules of personal cleanliness. Moreover, the cause could not have been in the food, seeing that food of precisely similar nature was in use at Standerton and Volkrust, and yet scurvy was entirely absent from these latter camps. But, on the other hand, the sanitary condition of the Middelberg camp was much inferior to that of the other camps named. At this time a determined effort was made to improve the sanitary condition of camps. Soap and fuel were ordered to be issued in unlimited quantities, whereas previously they had been supplied in restricted amounts. These articles were included in a new ration scale which was also introduced at this time. Scurvy now disappeared from Middelberg. It may be said that the cessation of the disease was due to the new diet provided, but the total absence of scurvy under the old dietary scale at Standerton and Volkrust is entirely opposed to this view, and it is remarkable that the disappearance of the disease was as markedly coincident with improved personal cleanliness in the Middelberg camp as with the change in diet.

2. Scurvy did not appear in the district of Standerton until the last month of the war when the mobile troops became stationary and concentrated into large units in the immediate neighbourhood of the town. Further, it continued with increasing severity among these units when war had ceased and when restrictions in the way of purchasing extra food had been withdrawn. After the war all classes were free to supplement their Government rations by purchasing fruit and vegetables at the various provision stores in the town. Special inquiry was made among those showing well-marked signs of the disease as to whether or no fresh fruit or fresh vegetables had formed part of their dietary in addition to the official supply of rations. In many cases there was abundant satisfactory evidence forthcoming to the effect that the sufferers were purchasing and consuming fresh pineapples, fresh bananas or fresh melons, and other vegetables imported direct from Natal. It is highly probable that these natives, whose daily pay always equalled and in many cases exceeded that of the English soldier, both purchased and consumed regularly a larger quantity of fresh vegetables or fruit than was the custom of our British European troops.

3. The only European affected at Standerton was attached to the Native Sanitary Corps—a unit of which 76 per cent. suffered from scurvy. Let it be noted, however, that this European lived with these natives. His diet was similar to that of the other European soldiers at Standerton, but he spent the whole of his time in the company of these scavengers and by reason of this mode of life was freely exposed to any mouth-to-mouth infection. On the other hand, the family of the head native, consisting of six individuals, was unaffected by scurvy. Their dietary was that of the Native Sanitary Corps, but they lived in a tent at a short distance from the scavengers' encampment and their standard of personal cleanliness was of a high order.

The varying incidence in the two units—the Native Labour Corps and the Native Sanitary Corps—namely, 16 per cent. in the former and 76 per cent. in the latter—cannot be explained by the food alone, since both units were on precisely the same diet.

4. With regard to the other natives inspected at Standerton not one of the 150 employed at the burgher camp as servants to the European camp staff was found to be affected, nor did natives employed as domestic servants in the European military messes, shops, or households in the town show signs of the disease; but in the remaining units, both civil and military, scurvy prevailed directly as the filthy habits of the natives were allowed to go unchecked by direct European control.

5. Of those sufferers from scurvy admitted to the military hospital at Standerton 12 per cent. died. Of those who recovered 90 per cent. returned to their former duties, their former dietaries, and their former surroundings; and though they lived among men afflicted with scurvy, yet the hospital records do not furnish a single instance of a patient once recovered from scurvy seeking readmission for a recurrence of the disease.

These facts, therefore, concerning the incidence of scurvy in the various bodies of individuals seem to be against the contention that food is the sole cause of the disease; and, moreover, the clinical facts also would seem to oppose the contention. The infection appears to occur through the mouth, the general system being involved later and secondarily. The manner in which the primary infection occurs and how it gives rise to the manifestations of the disease in the mouth are points on which it is not easy to make any definite statement and further investigation is required.

In conclusion, I submit that the facts adduced seem to prove that scurvy is not due to either the presence or absence of any particular kind of food from the dietary but rather to an infection for which food may act as a vehicle under conditions of dirty storage or dirty preparation; and considering that the disease prevailed in inverse proportion to the standard of personal hygiene of the individuals affected its infectivity would seem to depend on the insanitary habits and perhaps the unwholesome occupation of those who were its victims.

WEEKLY DIETARY SCALES AND INCIDENCE OF SCURVY.

A.—*In use at all Burgher Camps till Dec. 31st, 1901.*

Adults.—Flour, 7 lb.; sugar, 12 oz.; ground coffee, 6 oz.; salt, 4 oz.; tinned meat, 2 lb.

Children (6–12 years).—Flour, 7 lb.; sugar, 12 oz.; ground coffee, 3 oz.; salt, 2 oz.; tinned meat, 1 lb.

Children (1–6 years).—Flour, 3½ lb. Remainder, as children (6–12 years).

Note.—When fresh meat served out—adults, 3 lb.; children, 2 lb. Tinned milk issued, "made up" by dispensers with water, ready for drinking, for children only, and issued daily but for adults only on medical officer's order. Wood and coal issued when required.

B.—*Introduced to all Burgher Camps Jan. 1st, 1902.*

Age.	Vegetables.	Flour.	Syrup or sugar.	Coffee.	Fresh meat.	Salt.	Milk.*	Rice.	Soap.	Butter.
	lb.	lb.	oz.	oz.	lb.	oz.		lb.	lb.	oz.
Adults	1½	7	12	7	4	4	1 tin	1	½	4
Children, 6–12 years	1½	5	12	4	3	4	7 qts.*	½	½	4
Children, 2–5 years	As supplied by camp matron.	3½	12	—	2	2	14 qts.*	½	½	4
Children under 2 years... ...		2½	12	—	—	2	14 qts.*	—	½	4

* Tinned milk, made up by dispensers with water, daily ready for consumption.

A + B.—*Incidence of Scurvy.*

Camp populations—children, 48 per cent.; adults—male, 12 per cent.; female, 40 per cent.

Burgher camp, Volkrust, population, 5000, *nil*; burgher camp, Standerton, population 5000, *nil*; burgher camp, Middelberg, population, 6000 Europeans, 100 cases.

Outbreak in December, 1901, and January, 1902.

C.—*European Soldiers—at Various Times.*

Bacon or cheese, jam, frozen meat, fresh meat, tinned vegetables and meat, coffee, sugar, salt, rum, soap and fuel, tea, lime-juice (not usually taken).

Admissions to No. 17 General Hospital, Standerton, 22,000. Scurvy, *nil*.

Examined on duty, 3000. Scurvy, one. (This man was in charge of transport section of Native Sanitary Corps, P.I. 2.)

D.—*For Natives employed in Burgher Camps: Standerton, Middelberg, and Volkrust.*

Flour, 7 lb.; sugar, 8 oz.; coffee, 4 oz.; salt, 4 oz.; meat, 1 lb.

Total employed at each camp, 150.

Scurvy at Middelberg, one case; scurvy at Standerton and Volkrust, *nil*.

E.—*For Natives employed by Military as Muleteers.*

Lime-juice issued in December, 1902, but not taken.

Bread, flour, or biscuits, 7 lb.; sugar, 14 oz.; coffee, 3 oz.; meat, 7 lb.; salt, 2 oz.; tinned vegetables bi-weekly, as for European troops.

Attached—1st Essex, Rifle Brigade, Leicesters. 60 examined (July, 1902) outside Standerton. Scurvy, *nil*.

Attached—Army Service Corps Transport at Standerton, 1903.
Officers' Cape Cart line, 9 men. Scurvy, *nil*.
Police ... ... 8 men. Scurvy, 4.
Muleteers, 400 examined. Scurvy, 32 per cent.

Attached—Pom pom Section, 9 men. Scurvy, *nil*.

Attached—19th Hussars and 83rd Field Battery R.A., 67 men. Scurvy, 22 per cent., at Standerton, 1903.

F.—*For Labourers employed by Military as Porters and Scavengers.*

Mealie meal, 16 lb.; meat, fresh, 1 lb.; lime-juice, 1 oz. weekly in December, 1902, but not taken.

Excess mealie meal (this was burnt and drunk as a black liquor termed "native coffee"), fermented makes a drink called "mahow" (intoxicating)

I. *Native Sanitary Corps (Scavengers).*
February, 1903, at Standerton.

1. Examined, 34. Scurvy, 76 per cent.
2. Transport, 7. (To the transport section is attached the European under Dietary C who was affected with scurvy.) Scurvy, 100 per cent.
3. Later examined, 20. Scurvy, 100 per cent.
4. Head native with family of six, living separate. Scurvy, *nil*.

II. *Native Labour Corps (Porters).*
Employed, 120. Scurvy, 16 per cent. Examined, February, 1903, at Standerton.

G.—*Natives employed by Repatriation Department, Standerton, as Muleteers.*

Biscuits, flour, or meal, 7 lb.; meat, chiefly fresh, 7 lb.; coffee, 7 oz.; salt, 3¼ oz; lime-juice, 1 oz.; sugar, 21 oz.; wood, 14 lb.

Employed, 900; examined, 500; scurvy, 50 per cent.

In hospital, 14; scurvy, $\frac{12}{14}$ = 86 per cent.

In detention tents, 14; scurvy, $\frac{12}{14}$ = 86 per cent.

Canterbury.

THE TREATMENT OF TABES DORSALIS AND ITS PROGNOSIS.

BY DR. MAURICE FAURE.

IT is an erroneous idea to consider tabes as a disease amenable to one method of treatment, that is to say, by drugs. Whether the drug be nitrate of silver, which was formerly employed, or mercury, which is employed nowadays, the idea remains the same and the object is to cure the patient by means of a drug. A nervous disease is not an equation in which the observer may set one poison as equally opposable to another poison. The evolution of tabes bears a definite relation to various infections and intoxications. The patient is always a complex problem and the physician must in every case take into consideration such causes as syphilis, overwork, alcoholism, tobacco poisoning, influenza, tuberculosis, and the like. On account of the predominant part played by syphilis in the pathogeny of tabes it is indisputable that antisyphilitic treatment ought always to be tried, at all events at the beginning of the attack, and especially if the tabetic patient have not previously undergone antisyphilitic treatment, but this treatment should not be kept up as a routine and particularly when it is observed to give bad results. Certain cases of syphilitic tabes which are vigorously treated with mercurials given in increasing doses from the beginning of their rapid evolution are often much improved and furnish the greater part of the cures

(Lemoine, Leredde), but the systematic giving of mercury or of iodides in big doses in those patients in whom tabetic lesions are already well marked, whose general health is broken down, and who are suffering from auto-infections arising from the gastro-intestinal tract, the bladder, or the lungs, does nothing except increase the number of poisons in an organism which is already overcharged with them, and as a consequence aggravates the nervous disorders which are the consequences of those poisons.

It is indisputable (1) that no tabetic gets well solely on account of the quantity of iodide or of mercury which he absorbs, and (2) that aggravation of the disease is more frequent among tabetics who are put on an antisyphilitic treatment in increasing doses than among those who are not treated in this way (Belugou, Faure). It is necessary to avoid attributing exclusively to the action of heroic remedies such as mercury the relaxations and the diminutions in the symptoms of disease which are sometimes observed in the majority of cases of tabes, for such ameliorations are the rule, and it is incorrect to say that locomotor ataxy must be a disease which is necessarily and invariably progressive (Brissaud, Joffroy, Raymond, Marie, Ballet, and others). The disease is steadily progressive in a third of the cases. It is arrested, improved, or gets well in about a fourth of the cases and in the remainder it proceeds very slowly with periods of quiescence only affecting the life of the patient seriously on occasions, and during the rest of his life offering him the possibility of living a life the activity of which doubtless must be diminished, but which is by no means very uncomfortable and is markedly different from the average life which used to be supposed to be the only one in view for a tabetic; and this life may go on for a long time, for by statistics collected at Berlin, La Malou, and Bicêtre it appears that the duration of life of a tabetic is very nearly the same as that of a normal patient (Leyden, Belugou, Faure, and P. Marie).

Why, then, are the present prognosis and that formerly held so different? For many reasons. First, it is obvious that in the present day nearly all medical men know how to diagnose tabes in its very early stages, whereas in former years the diagnosis was only very rarely made. As the patient is made the sooner aware of his malady by so much is he the sooner treated. Secondly, the very general employment of the treatment by mercurials and iodides of syphilitic patients is probably a reason for the diminution in the evolution of tabes which may be called the daughter or niece of syphilis (Babinski, Leredde). And thirdly, because a tabetic patient nowadays is treated as a tuberculous patient and so many other patients suffering from chronic diseases, so that he does not sit down with his hands folded and resign himself without a struggle to the fatal sentence which used to be pronounced against him as soon as the diagnosis of tabes was given. The tabetic takes care of himself, that is to say, just as a tuberculous patient does; he modifies his mode of life, he gives up certain periods to treatment, he regulates his affairs and no longer carries on his work as a normal man but as an invalid—in short, he makes terms with his enemy and sacrifices a little to gain much (*il fait la part du feu*). He lays down a special regimen for himself and so is enabled to economise his life, so to speak, and to make the smallest demands possible upon his vitality. The physician who undertakes the care of a tabetic patient should map out his code of directions so as to attain the mean between two extremes. (1) He must not allow the patient to think that there will be a complete and radical cure within a few months or that there is any specific remedy for his disease; but (2) he must not allow his patient to abandon himself to his lot as one without hope or to think that his disease is inevitably tending towards death, for such is not the case. The physician should further inform the patient that the disease from which he is suffering will in all probability not get any less during his life, that it will diminish his capacity for work, and will be the cause of suffering and of discomfort, but that on the other hand the watchful care of the medical attendant and the willing coöperation of the patient will to a great extent avoid the occurrence of possible complications. Finally, he must tell him that tabetic patients have been known to get quite well.

As a matter of fact, the arrest with the persistence of the abolition of the patellar reflex or of Argyll Robertson's sign, or of any other symptom without importance has the same value for the patient as a cure. Besides this the medical man must attend carefully to the state of the patient's bladder and see that it is washed out; he must prevent the accumulation of fæcal matter in the intestines which so commonly occurs in tabes; he must keep a watchful eye upon his patient's nourishment and sleep and see that he is not underfed and that he does not suffer from insomnia; he will order him to live as much as possible in the open air and will protect him from overwork, either mental or physical; and finally he will watch with care the condition of the circulatory system. By doing this the physician will be in the way to combat most of the causes of death which supervene in tabes. Moreover, while this long watch is being kept the physician must remember to order such drugs as may be suggested by circumstances.

The physician should besides impress upon his patient the necessity for taking an annual "cure" of one or more months' duration during which the patient residing in a sanatorium should devote himself entirely to the task of repairing the damage already caused by the disease and of putting himself into a condition to resist the attacks of complications which may be expected to occur. During this therapeutic retreat the patient should by means of special exercises learn how to train his respiratory system, as it is owing to defects in this that a tabetic patient suffers from respiratory crises, such as attacks of suffocation, of broncho-pulmonary infection, or of hæmoptysis. He must also train his excretory system so far as regards urination and defecation. He will also find that he will greatly improve and possibly will recover altogether his powers of voluntary movement over which he may have completely lost control. During the period of retreat he may also submit himself to a special hygienic course of thermal hydrotherapy, and finally must employ all the methods which experience has already shown to be useful in cases of tabes.

But the continuity of the treatment must be maintained not for a day, or a week, or a month, but throughout the years. After years of strict care and of watchful medical surveillance the tabetic patient will find himself a changed man. Even though he do not recover the integrity of all his functions yet he may at least make sure of the prolongation of his life, of being able to do some kind of work, and to have health and strength sufficient to enable him to lead a useful and interesting life. It is by following these directions that the physician will find himself in a position to give in a case of tabes a prognosis which, if not absolutely good, is yet quite bearable in the majority of cases.

Paris.

SEVEN CASES OF HOUR-GLASS CONTRACTION OF THE UTERUS.

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THE following examples of hour-glass contraction of the uterus occurred in the last 200 cases of midwifery that I have attended.

CASE 1 (No. 58).—The patient was a middle-aged multipara. I was called in by a *confrère* when the child had been born five hours and the patient was much exhausted from loss of blood and prolonged manipulation. After examination I found that, with the exception of a small piece removed with the cord by forcible traction before my arrival, the placenta still remained in the upper portion of the uterus. Below this dilated upper third of the uterus was a firmly contracted ring of uterine muscle with an aperture of about one inch in diameter. Pressing the finger-tips of my right hand firmly together to form a cone I gradually forced them past the obstruction, then clenching my right fist I still further dilated the constricting part and after some manipulation managed to work round between the uterine walls and the remains of the placenta. This done the latter was easily removed and the left hand, which all the while had been grasping the fundus, then had no difficulty in inducing firm and general contraction of the womb. The lower two-thirds of the uterus had been the while in a complete state of inertia for my right hand and forearm had entered the uterus per vaginam as far as the elbow through a mass of jelly-like clots before I could reach the constricted orifice and the retained, though unattached, placenta. Friction of the fundus externally had been carried on intermittently, I believe, before I arrived, and the patient

had lost a great deal of blood. An intra-uterine injection of hot water with permanganate of potass and a hypodermic injection of strychnine soon improved the pulse. Regular antiseptic douches were for the next ten days administered. This after-treatment was employed in all these cases.

CASE 2 (No. 116).—The patient, a very weak woman with her third child, miscarried at seven months after weeks of intermittent uterine hæmorrhage. The fœtus was born easily but immediately afterwards the uterus assumed a state of hour-glass contraction. With the left hand on the fundus the right hand was introduced as above described, and it was then found that the placenta was everywhere adherent above the contraction, and it had to be peeled off most carefully lobe by lobe; very little bleeding took place. I dared not give this patient an anæsthetic as her pulse was weak and intermittent. She made a good recovery. Her child was so weak and puny that he only breathed for a few hours.

CASE 3 (No. 134).—The patient, in her fifth confinement, showed a well-dilated os uteri, but the pains were ineffective and the head did not engage or descend. Forceps were therefore applied and grasping the head in its long axis I rotated and delivered it with ease, with the occiput anterior. The uterine inertia persisted after the removal of the child and an hour-glass contraction was discovered. The placenta, which was non-adherent above the constriction, was removed as described in Case 1, with excellent after-results.

CASE 4 (No. 156).—The patient was a primipara, aged 42 years. Dilatation of the os uteri was very slow; the membranes, which contained a large quantity of greenish-black liquid, presented in front of the head and were mistaken by the nurse for a placenta prævia. After the child was born the uterine walls assumed the hour-glass condition. The woman engaged to nurse the patient was so ignorant, emotional, and deaf that I had to go out myself and secure a substitute during the first stage of labour. The patient weighed 16 stones, was the subject of chronic asthmatic bronchitis, and had a pulse so small and weak that I dared not administer an anæsthetic. Her only sister was an in-patient at a metropolitan asylum. As the patient throughout violently resented my manipulations the extraction of the placenta was very difficult, but eventually I succeeded. In spite of the complicating conditions she did well and her convalescence was uneventful.

CASE 5 (No. 169).—The patient was a healthy young primipara. The child was born naturally save for the fact that the cord was round the neck. An hour-glass contraction was noticed immediately after the birth. When the constriction was dilated the placenta, which was unattached, was easily removed and the patient made a good recovery. 12 months before delivery I saw numerous fibrous masses of any size up to that of a walnut which were discharged with the patient's menstrual flow on one occasion only. They might have been fleshy moles or masses of decolourised blood clot. I could detect no organised tissue.

CASE 6 (No. 189).—With her second child the patient showed an occipito-anterior presentation. The child was extracted with forceps under chloroform as the uterine contractions were futile in operation. Hour-glass contraction supervened on the birth of the child, but the non-adherent placenta was readily extracted. As in the foregoing cases the patient had no bad after-symptoms.

CASE 7 (No. 198).—The patient 14 months previously had miscarried at the fourth month. This labour was at term and with strong, steady pains the child appeared with the occiput anterior, the labour lasting four hours. After the birth of the child the fundus was felt so high up and so indefinite that the right hand was introduced into the uterus up to the elbow and an hour-glass contraction was discovered. The after-birth was lying loose in the upper third of the uterus and was retrieved in the way previously detailed. Recovery was in every way unexceptionable.

None of these placentas when examined showed any signs of morbid degeneration, nor was the cord attachment abnormal. Chloroform neither relaxed nor prevented the uterine band from contracting below the placental site. Matthews Duncan describes the condition "as one of uterine inertia both above and below the hour-glass contraction." Of this there can be no doubt, for although it is very often difficult to disengage the finger tips from the placenta and its membranes, which fall like a loose glove over them after they have overcome the hour-glass contraction, yet when once the fingers are completely disengaged it is found that there is plenty of room beyond the contraction—i.e., between the detached placenta and the upper inert uterine sac. From the cases above narrated it will be seen that, save in Case 1, no undue post-partum hæmorrhage occurred, as Simpson leads one to expect from this condition. Herman, who speaks of hour-glass contraction as "a rare condition," proceeds to suggest "that the circle of contraction is identical with the retraction ring or ring of Bandl." The illustration which he figures seems to point to the fact that perhaps the ring of Bandl is a synonym for the internal os. Playfair states "that this contraction is said to take place at the internal os." Clinically I have never been able to define the internal os during labour and when one's hand and arm enter a flaccid inert bag up to the elbow before reaching the constriction I can hardly believe that the inner os is so high. Rigby says that "the most frequent cause is over-anxiety to remove the placenta, the cord is frequently pulled at, and at length the os uteri is excited to contract." If, indeed, the uterus were not inverted by this procedure I think that Case 1 shows what would happen inevitably. Playfair also says "that if the *vis a tergo* was employed it would not happen but it is because the *vis a fronte* is used that these irregular and spasmodic contractions occur." Johnstone further "attributes the condition to the fact that ergot has been given before the expulsion of the placenta." But with the exception of Case 1 in all the above the *vis a tergo* was carefully and persistently employed, whilst no *vis a fronte* was used and ergot was not given in any of them until the uterus was completely emptied. Braun's sweeping assertion "that hour-glass contraction of the uterus is more frequently encountered in the experience of the young practitioner and diminishes in frequency in direct ratio to increasing years" seems hardly to account for such a definite condition.

Cases 3 and 6 showed obvious uterine inertia before delivery and made the use of forceps obligatory, so that it is not to be wondered at that this, another variety of uterine inertia, afterwards supervened, for I look upon the condition as an uncommon variety of uterine inertia. If the placenta is promptly extracted the irregular contractions can scarcely be regarded as more than an interesting feature, but when the condition is not recognised and treatment is delayed then the uterine sac is allowed to remain as two large flaccid bags, full of clots perhaps and with blood flowing or oozing from the placental site. The danger to the patient's life from this persistent inertia must be considerable, if not always immediate.

When the woman is lying in the usual obstetric position—on her left side—if hour-glass contraction supervenes the fundus lies high up in the left hypochondriac region of the abdomen and is hardly, or at most indistinctly, to be felt. These conditions are conveyed at once to the left hand which after the birth of the child ought never to leave the fundus till it yields a "cocoa-nut" sensation to the grip half way between the umbilicus and the pubes. When hour-glass contraction occurs the uterine cavity must be explored for the purpose of removing the after-birth, but with the proper use of disinfectants at the time and afterwards this manipulation should not give rise to any great danger. Chloroform should be given to mitigate pain if its use is not in any way contra-indicated.

The explanation of this abnormal muscular contraction of a section of the uterine walls seems to be that the womb is in full retraction and contraction to expel the child and when this has been accomplished it attempts afterwards to expel the placenta. But in a small proportion of cases the placenta cannot be at once detached by these muscular efforts from its uterine site and the retracting longitudinal muscular fibres, meeting with an unexpected resistance and exhausted by their recent prolonged efforts, relapse into a state of inertia. The circular fibres, however, below the placental site, acting simultaneously, find no resistance to their endeavours and contract firmly, and thereby exert perhaps an inhibitory action on the retractive longitudinal element below them—i.e., in the lower two-thirds of the uterine muscular walls.

Ewell, Surrey.

ROYAL UNITED HOSPITAL, BATH.—A cricket match, forming a continuation of the "Bath cricket week," was played at Bath on June 9th for the benefit of the Royal United Hospital. Both sides contained prominent members of the Somerset County Cricket Club and there was a large attendance.

NOTES ON THE ANALYTICAL EXAMINATION OF URINE.

BY ALFRED H. ALLEN
AND
ARNOLD R. TANKARD.

THE importance to medical practitioners of making examinations of the urine of their patients in the case of many obscure diseases is now widely recognised and the analytical examination of urine would be more generally practised if the methods of examination could be so simplified as to bring them within the scope, both of time and skill, of the busy medical practitioner. In many instances an approximate determination of the chief constituents of the urine is all that is necessary for throwing light on the case and the physician would willingly sacrifice extreme accuracy in favour of a method which was rapid and fairly simple. We have aimed at simplifying some of the analytical methods in ordinary use in such a manner as not gravely to affect their accuracy. The following notes are not in all respects novel but they are the outcome of considerable practical experience and we believe that our observations will be found useful to others working in this direction.

Chlorides.—The determination of chlorides in urine is usually complicated by the presence of a considerable proportion of organic matter, which is precipitated more or less by silver nitrate if that reagent be used for their determination. The usual plan of avoiding interference is to evaporate the urine to dryness and to ignite the residue with nitrate of potassium or ammonium to oxidise the carbonaceous matter. The residue is then dissolved and the chlorides determined by titration with a standard solution of silver nitrate, using neutral potassium chromate as an indicator. This involves time and the evaporation of the urine is not always a pleasant process. A more convenient plan is to use Volhard's method, which can be applied to the diluted urine without previously destroying the organic matter.

A preferable plan to either is, in our experience, to oxidise the organic matter by permanganate. This is effected very readily and the whole process, including the titration, can be carried out in five or six minutes. The method has the additional advantage of requiring only one standard solution—namely, nitrate of silver. From 10 to 20 cubic centimetres of the sample of urine, according to its concentration, is treated in a porcelain basin with two cubic centimetres of strong sulphuric acid and while the mixture is still warm a cold saturated aqueous solution of potassium permanganate is dropped in, with constant stirring, until the pink colour no longer fades or fades only very slowly. The liquid will by this time be nearly colourless. It should be neutralised by dropping in a solution of caustic potash or soda (free from chlorides) until after stirring it is found to be neutral to litmus-paper. The liquid is then diluted until it measures about 50 cubic centimetres, two drops of a saturated aqueous solution of neutral potassium chromate added, and the liquid titrated in a porcelain basin by standard silver nitrate, which is added from a burette until the white chloride of silver becomes tinged reddish from the formation of silver chromate. If the silver solution be decinormal—that is, prepared by dissolving 17·0 grammes of silver nitrate in one litre of water—each cubic centimetre required for the titration represents 0·00355 gramme of chlorine or 0·00585 gramme of sodium chloride in the urine examined; and if ten cubic centimetres of the sample have been used the figure thus obtained, multiplied by ten, will represent the number of grammes per 100 cubic centimetres of urine. Instead of using decinormal silver nitrate a special solution may be prepared containing 4·789 grammes of pure silver nitrate per litre. Every cubic centimetre of the silver solution used will represent 0·001 gramme of chlorine in the urine employed. Hence, if 37 cubic centimetres be required the urine contains 0·37 per cent. of chlorine, which figure, multiplied by 4·375, equals 1·62 grains of chlorine per fluid ounce.

In the case of very dilute and pale samples of urine it is frequently possible to omit the treatment with acid and permanganate and to titrate the urine direct, after dilution with water, with silver nitrate solution. Again, urines of normal concentration may frequently be treated with the permanganate solution in the absence of sulphuric acid, a modification which does away with the necessity for subsequent neutralisation. Dark-coloured urines should always be acidified and treated with permanganate as already described, as also should any urine giving a doubtful "end-reaction" when titrated direct or after simple treatment with permanganate.[1]

Uric acid.—Although the determination of uric acid in urine can be effected with considerable accuracy by the methods of F. Gowland Hopkins and of Tunnicliffe and Rosenheim, a rapid, simple, and moderately accurate process has been a desideratum. These requirements are fulfilled in the following method by E. H. Bartley ("Medical Chemistry"), which we have found to give very satisfactory results. The process depends upon the fact that ammonio-nitrate of silver precipitates uric acid completely from its solutions, while any excess of silver may be immediately detected by means of the black silver sulphide produced on the addition of a drop of ammonium or potassium sulphide solution to a little of the filtered titrated liquid. The details of the method are as follow:—Fifty cc. measure of the sample is treated in a porcelain basin or glass beaker with five cubic centimetres of magnesia-mixture (made by dissolving ten grammes of crystallised magnesium sulphate and 12 grammes of ammonium chloride in 100 cubic centimetres of ammonia of 0·960 specific gravity[2]) and ten cubic centimetres of 0·960 ammonia. The liquid is next heated nearly to the boiling point and *while quite hot* a fiftieth-normal solution of silver nitrate (3·40 grammes per litre) is slowly added from a burette. After each addition of a small quantity of the silver nitrate solution the liquid is well stirred with a glass-rod and then tested for the presence of silver in solution. This is best done by placing a drop of the liquid on a small disc of filter paper and bringing a drop of ammonium or potassium sulphide into contact with the edge of the disc. At the point of contact of the two solutions a black-brown colouration will be produced when an excess of silver nitrate has been added. An alternative plan, recommended by Bartley, is to plug loosely the end of a narrow glass tube with cotton-wool and place the plugged end of the tube in the liquid, when the filtered solution will rise in the tube. A drop of this liquid may, on withdrawing the cotton-wool, be placed on a white porcelain tile and a drop of ammonium sulphide added, when the brown-black colouration will be seen if the titration be complete. A deduction of 0·5 cubic centimetre from the amount of $\frac{N}{50}$ silver nitrate used should be made, this being the quantity required in excess to produce the sulphide colouration. One cubic centimetre of $\frac{N}{50}AgNO_3$ is equivalent to 0·00336 gramme of uric acid. Thus if 50 cubic centimetres of a sample of urine required 10·50 cubic centimetres of $\frac{N}{50}AgNO_3$ when examined by the above process, the content of uric acid would be: $10·5 - 0·5 = 10·0 \times 0·00336 = 0·0336 \times 2 = 0·0672$ gramme of uric acid per 100 cubic centimetres of urine.

Phosphates.—The following modified form of the well-known uranium method for the determination of phosphates in urine has given us very fair results. An aqueous solution containing 35 grammes of uranium nitrate and about 160 cubic centimetres of acetic acid (B.P.) to the litre is required, and also a solution of sodium acetate, made by dissolving ten grammes of this salt and 15 cubic centimetres of acetic acid in water and diluting to 100 cubic centimetres.[3] The uranium solution should be standardised against a solution of pure crystallised (uneffloresced) sodium phosphate, $Na_2HPO_4 + 12H_2O$. This is prepared by dissolving 1·00 gramme of the salt in water and making the solution up to 100 cubic centimetres. 50 cubic centimetres of this solution contains 0·100 gramme of phosphoric anhydride, P_2O_5. The uranium solution prepared as above is of such strength that one cubic centimetre corresponds to about 0·005 gramme, P_2O_5.

The process is carried out as follows:—20 cubic centi-

[1] The same process is applicable to the determination of the chlorides in the serum of milk. The milk is heated to about 80° C. when a few drops of acetic acid are added without stirring. The whey separates from the curd in an almost clear condition and may be poured off through a piece of muslin. Ten cubic centimetres of the whey thus obtained is then treated in the manner described above.

[2] This is the Liquor Ammoniæ, B.P.

[3] The use of sodium acetate is not necessary when uranium *acetate* is employed in the place of nitrate as the standard reagent. Its addition in the latter case ensures the absence of free nitric acid during the titration.

metres measure of the uranium reagent is placed in a porcelain basin, five cubic centimetres of the sodium acetate added, and the mixture heated nearly to boiling. The solution containing the phosphate (either the standard sodium phosphate solution or the urine under examination) is then gradually added from a burette, the mixture being well stirred after each addition. The end of the reaction is indicated when the rich brown colouration, produced when a drop of the liquid from the basin is removed with a glass rod and added to one of a series of little heaps of powdered potassium ferrocyanide (a few grains in each heap) placed on a porcelain plate, ceases to be formed. The volume of phosphate solution or urine required is then read off in the burette. A much more definite "end-reaction" is obtained when the phosphate is run into the uranium solution (as above) than when the reverse method is followed, since it is easier to observe the disappearance of the brown uranium ferrocyanide than its formation.

Supposing on standardising the uranium solution 50·0 cubic centimetres of the standard phosphate solution were added to the uranium solution in the basin before a brown colouration ceased to be given with the indicator. Then, since 50·0 cubic centimetres phosphate solution = 0·100 gramme P_2O_5, 20·0 cubic centimetres of uranium solution = 0·100 gramme P_2O_5, and thus 1·0 cubic centimetre is equivalent to 0·005 gramme P_2O_5. In an experiment 20 cubic centimetres of the uranium reagent required 54·5 cubic centimetres of a sample of urine before the brown colouration ceased to appear. Hence 54·5 cubic centimetres of the urine contained 0·100 gramme P_2O_5; equal to 0·183 gramme P_2O_5 per 100 cubic centimetres of the sample.

Urea, sugar, and albumin.—The usual methods for the determination of urea and sugar in urine are well known and we have nothing new to state regarding them. For the detection of minute traces of albumin in urine we have found salicyl-sulphonic acid (sulpho-salicylic acid) to exceed in delicacy many of the commonly employed reagents. In applying the test it is simply necessary to add a few crystals of the salicyl-sulphonic acid to a little of the clear urine and agitate the mixture, when the appearance of a turbidity or the formation of an actual precipitate will indicate the presence of albumin. When only minute quantities of albumin are present the turbidity is best observed against a black background. The precipitate produced by an albumin or globulin is not affected by heat, while that due to albumoses or peptones dissolves, reappearing as the liquid cools.

NEPHRECTOMY AFTER INJURY.

By H. T. COX, L.R.C.P., L.R.C.S. IREL.,
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THE patient was a youth, aged 19 years, a stoker on H.M.S. *Pyramus*. On the afternoon of Dec. 22nd, 1903, owing to the heavy rolling of the ship, he was thrown against a guard plate in the stokehold, striking his right side. When first seen he was collapsed and complained of great pain at the seat of injury; he vomited twice and voluntarily emptied the bladder, the fluid consisting of almost pure blood. The patient was admitted to the Royal Naval Hospital, Malta, at 6.30 P.M., four hours after the accident. He was then collapsed, his face was blanched, and he had a weak thready pulse. There was complete loss of resonance in the right flank reaching almost to the middle line in front. A catheter was passed and a quantity of well-mixed blood and urine was drawn off. The bladder was washed out with boric lotion, a vermiform clot coming away. Sulphate of strychnine ($\frac{1}{30}$th of a grain) was given hypodermically. At 8.30 P.M. the patient was almost pulseless, very restless, and the respirations were of a sighing character. A few ounces of deeply blood-stained urine had been passed, showing that hæmorrhage still continued. As he was rapidly getting worse it was decided to operate immediately.

Ether having been administered, an incision five inches in length was made from the middle of the last rib downwards and forwards towards the iliac crest. The right kidney was exposed and examined after a large quantity of blood clot had been turned out. The organ was found to be lacerated badly, so it was cleared from the surrounding fat and drawn into the mouth of the wound. The pedicle was then tied with catgut and divided and the kidney was removed. The wound was well washed out with boric lotion and ligatures were applied to one or two bleeding points. Deep and superficial sutures were inserted, a large size drainage-tube being left in the lower angle of the wound. Half a pint of sterilised normal saline solution was injected into the median basilic vein during the operation and at its conclusion sulphate of strychnine ($\frac{1}{30}$th of a grain) was administered hypodermically. The patient bore the operation very well, his pulse being better afterwards than before. The kidney was found to be torn completely in half transversely and was also lacerated longitudinally along its inner border. The patient made uninterrupted progress towards recovery. The first urine passed was slightly blood-stained but by the following morning it was quite clear and contained no trace of blood. 33 ounces of urine were passed on the first day, after which the quantity increased and was generally between 40 and 60 ounces. The largest amount measured was 89 ounces passed on the ninth day. The temperature never rose above 101° F. The drainage-tube was removed after 36 hours. On Jan. 2nd, 1904, the wound was healed except for a sinus at its lower angle, where the tube had been. On the 6th the patient was allowed to sit up and convalescence was rapid.

This case is of interest, as such very extensive injury to the kidney without other viscera being involved is, I think, unusual.

Malta.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

CARDIAC SOUNDS ENORMOUSLY INCREASED BY SURGICAL EMPHYSEMA.

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I REPORT the following case as being of interest, as I am not aware, from my limited reading, of a similar case having been reported.

The patient was a female, 38 years of age. She had been drinking heavily and in the course of a quarrel with her husband she jumped out of a window and was brought into the infirmary on the police ambulance. On admission she had a few contusions about the face and a small bruise of about the size of half-a-crown at the junction of the third and fourth right ribs with the sternum. Nine hours afterwards examination of the chest revealed that the bruising in this situation had nearly gone. On listening to the cardiac sounds they appeared to be normal at the apex but upon going up towards the aortic area a very slight systolic murmur became apparent; when, however, the stethoscope was placed on the sternum and over an area about three inches by three inches situated over the third and fourth right ribs near the sternum most alarming cardiac murmurs were heard. Neither in aneurysms nor with the phonendoscope have I heard sounds or murmurs so amplified. The skin over this area was raised about a quarter of an inch by surgical emphysema. At first an aneurysm near the bursting point, causing rupture of the pleura, was thought of, for a thrill could be very distinctly made out. Gradually as the pressure of the stethoscope was increased it cut out the air and I was enabled to listen through the ordinary chest wall, the result being that the alarming sounds immediately subsided and the sounds of the heart were heard quite distinctly. As the pressure of the stethoscope was diminished the abnormal sounds returned again to their full intensity. A more minute examination detected increased movement of the third and fourth ribs, due apparently to a fracture close to their junction with the sternum.

The following points of interest appear in this case. 1. The sounds and situation closely simulating a sudden bursting through the pleura of an aneurysm (although of course there were features against this). 2. The peculiar vibratory thrill in the emphysematous patch set up by each beat of the heart. 3. The extraordinary amplification of the

cardiac sounds caused by the minute caverns of air in the tissues. 4. The diagnosis being made by the cutting out of the part played by the air by the various pressures of the stethoscope.

Camberwell, S.E.

AN ANALYSIS OF THE SYMPTOMS PRESENTED BY 132 CASES ASSOCIATED WITH THE PRESENCE OF ASCARIS LUMBRICOIDES.

BY WALTER H. HAW, M.R.C.S. ENG., L.S.A. LOND.

HAVING noticed a little time ago a correspondence in THE LANCET on "Fever due to Ascarides" I am led to hope that the following analysis of 132 cases, taken from my day-book and extending over a period of two years, may prove of interest to the profession. The symptoms refer to what was stated either by the parent or the patient or what was noted by myself. I do not wish it to be inferred that I ascribe every symptom to the presence of the worms; I merely am desirous of conveying that in 132 cases, where the ages ranged from eight months to 33 years, in which worms were present the accompanying symptoms were observed. They are put down in the order of frequency.

Fever was noticed 41 times (31 per cent.); vomiting, 38 times (28·8 per cent.); cough, 31 times (23·4 per cent.); abdominal pain, 29 times (21·9 per cent.); diarrhœa, 27 times (20·4 per cent.); anorexia, 22 times (16·6 per cent.); restlessness, fretfulness, sleeplessness, night frights, and sleep-talking, 19 times (14·3 per cent.); rigidity of recti abdominis, 16 times (12·1 per cent.); emaciation, 14 times (10·6 per cent.); convulsions and nasal discharge, each 11 times (8·3 per cent.); constipation, 10 times (7·5 per cent.); cephalalgia, stomatitis, and pains in the limbs, each 9 times (6·8 per cent.); syncope, 8 times (6 per cent.); pallor, debility, and swollen hands or feet, each 6 times (4·5 per cent.); swollen face and nausea without vomiting, each 5 times (3·7 per cent.); delirium, 4 times (3 per cent.); swelling of the abdomen, mappy tongue, drowsiness, head sweats, pain in the chest, asthmatic attacks, and cold hands or limbs, each three times (2·2 per cent.); sweats, urticaria, eczema of the face, palpitation, crying fits, enlarged tongue papillæ, obstruction of the bowels, masses felt in the abdomen, and increased appetite, each twice (1·5 per cent.); while the following conditions were each noticed once (0·7 per cent.): jaundice, ascites, difficult micturition, nocturnal enuresis, erection of penis at the end of micturition, pains in the neck, fluttering before the eyes, photophobia, open-eyed sleep, sunken eyes, dark rings around the eyes, hysteria, trembling red fingers, decubitus on the knees and the hands, decubitus curled up, rigidity during sleep, and clonic spasms of the arms.

Knysna, Cape Colony.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

HILLINGDON COTTAGE HOSPITAL.

A CASE OF TETANUS TREATED BY THE INJECTION OF ANTITOXIN.

(Under the care of Dr. A. CHARPENTIER.)

A MAN, aged 29 years, suffering from tetanus, was sent to the Hillingdon Cottage Hospital by Dr. P. J. A. Seccombe of West Drayton. On admission on the evening of May 21st the patient was found to be dull and apathetic; his pulse was 100 and his temperature was 101° F. He complained of pain and stiffness in the back and neck, all the limbs were rigid though not fixed, the mouth could only be opened about half an inch, and the risus sardonicus was commencing to show itself. He was sweating profusely and the perspiration smelt sour, resembling that of acute rheumatism. A wound of about the size of half-a-crown was seen over the left patella, with a black slough in the centre, which gave off the characteristic offensive smell of a tetanus culture. The pus from the wound, examined under the microscope, showed the bacilli of tetanus and large numbers of staphylococci. The patient stated that he had burnt himself three weeks ago but had been to work until two days before admission when he had begun to feel pain. Soon after admission the patient had a tetanic paroxysm and had difficulty in swallowing. He was given a mixture of chloral hydrate and bromide of potassium. The next day he was anæsthetised and the wound was freely excised, with all antiseptic precautions, and 70 cubic centimetres of antitoxin were injected under the skin of the abdomen. (As it was Sunday the special serum for intracerebral injection did not arrive until late.) In the evening there was still a good deal of rigidity and the patient had one other paroxysm but slept fairly well. Early in the morning of May 23rd the patient was anæsthetised and two cubic centimetres of antitoxin were injected into each side of the brain, according to the directions given by Dr. Borrel of Paris, Mr. H. Swithinbank of the Denham Research Laboratory having kindly lent Dr. Charpentier the trephine and syringe. 20 cubic centimetres more antitoxin were also injected under the skin of the abdomen. The patient recovered well from the anæsthetic. When seen in the afternoon the rigidity had passed off from the limbs and neck and the patient could open his mouth and put out his tongue when requested. At 7 P.M. the temperature was 102·4°, the pulse was 120, the respirations were 40, and he was evidently very ill, although he could answer questions and had free movements of his limbs. The knee reflex was normal. At 10 P.M. the temperature was 104·2°, the pulse was 120, and the respirations were 60. Cold sponging reduced the temperature to 102° again and he took nourishment well, but he died at 8.20 the next morning.

Remarks by Dr. CHARPENTIER.—The interest of this case lies in the fact that the tetanic symptoms entirely disappeared under the treatment. And I regard the case as one of "mixed infection"—that is, that he was infected with septicæmia as well as with tetanus at the same time. For (1) the film showed the presence of cocci as well as the bacilli of tetanus and (2) death was certainly not due to tetanus or to any interference with the brain by the operation. The statistics of tetanus treated without antitoxin give a fatality of 86 or 88 per cent., while Koehler states that cases treated by intracerebral injection of antitoxin show a fatality of only 30·4 per cent. There is reason to suppose that the early use of antitoxin in every case will ultimately give us results almost as good as those obtained by the early use of antitoxin in diphtheria; in any case there is no other treatment that has any effect on the disease and as the antitoxin does no harm it is certainly worth trying in all cases and if used early enough the results seem promising.

ROCHDALE INFIRMARY.

A CASE OF GASTROSTOMY FOR STRICTURE OF THE ŒSOPHAGUS.

(Under the care of Mr. WILLIAM POOLEY.)

IN April, 1903, the following case came under the care of Mr. Pooley. The patient was a woman, aged 43 years, suffering from inability to swallow. Diagnosis was made of cancer of the œsophagus and probably of the thyroid gland, with secondary implication of the lymphatic glands. On May 15th she was taken into the infirmary for operation. She was then very emaciated and suffering acutely from hunger and had also a troublesome cough and much salivation. For four days she was fed on nutrient enemas and gained strength. On the 19th Frank's gastrostomy was performed in two stages, the stomach being opened on the 20th, when the tube was inserted and feeding commenced and was well borne. The patient made an uninterrupted recovery, the temperature never rose above 99° F., and the pulse kept more or less normal and of good volume. The abdominal wounds were healed on the 29th and she went home on June 9th.

On July 7th she was readmitted suffering from dyspnœa, due to the pressure of the growth on the trachea. On the 10th tracheotomy was performed (the lower operation). Again

she made a rapid recovery and was discharged on the 22nd. She now gained weight and was able to attend to her children and household duties and Mr. Pooley only called occasionally to see her, as the district nurses (Queen's Jubilee) went twice daily and attended to her tubes. She

continued free from pain, had a good appetite, and was cheerful till towards the end of December when she began to suffer from attacks of syncope. She died on Jan. 27th, 1904, the end being hastened by the growth opening the vessels in the neck and causing profuse hæmorrhage. The photograph which is reproduced was taken on Oct. 31st, 1903, five and a half months after the first operation.

PRETORIA HOSPITAL.

A CASE OF RECOVERY AFTER OPERATION FOR PERFORATION IN ENTERIC FEVER.

(Under the care of Dr. GEORGE THORNTON and Dr. A. W. SANDERS.)

A MAN, aged 22 years, was admitted into the Pretoria Hospital on Feb. 6th, 1904, with a history of severe headaches and general malaise for three days. A positive diagnosis of enteric fever was made a few days later from the persistent fever, the occurrence of definite "spots," and a palpable spleen. The disease ran a mild course and by the middle of the third week the morning temperature was normal, the evening temperature was from 99·6° to 100° F., and the pulse was only from 72 to 76. On Feb. 24th (the twenty-first day of the disease) a change, however, occurred. About two o'clock in the afternoon the patient complained of colicky pain in the abdomen. Some carminative was given and a hot water-bottle was applied to the abdomen with apparent relief. Shortly before 6 P.M. there was another attack of colic of much greater severity. Dr. Laing (assistant medical officer) was called. He noted that though the temperature was only 97·6° the pulse was 100 and that the patient was looking anxious and was decidedly ill. Dr. Thornton saw the patient with Dr. Laing at 6 30 P.M. and distinct rigidity of the right rectus muscle and some tenderness in the right flank were found. Palpation seemed to bring on spasms of pain which caused the patient to assume a decided "peritoneal" look. The abdomen was not at all distended but was quite hollow as it had been for some time past. The liver dulness was apparently normal. The pulse, which had been only 72 at 2 P.M., was now 116 although the temperature had fallen from 99·6° to 97·6°. Dr. Thornton and Dr. Laing both came to the conclusion that perforation had occurred quite recently. A turpentine enema was ordered and their surgical colleague, Dr. Sanders, was sent for with a view to operation if he agreed with the diagnosis. The enema acted well. Dr. Sanders began the operation at 9 P.M. and the correctness of the diagnosis was soon established. At the time of the operation the pulse-rate had risen to 126. The patient stood the operation very well and on the next day his condition was excellent, his temperature was 99°, his pulse was 88, and there was no abdominal pain. On the second day after the operation one-grain doses of calomel were given every two hours for four doses followed by a one-ounce dose of a saturated solution of magnesium sulphate. The bowels had not acted by the next day and there were some distension and general abdominal discomfort, so two five-grain doses of compound powder of elaterin were ordered to be given at four hours' interval. That night the bowels were moved freely to the great relief of the patient. The next few days were uneventful and the patient made steady progress towards recovery. Eight days after the operation, however, the temperature began to rise again because of the onset of a definite relapse which was attended by fresh crops of "spots." The relapse was of a mild type and never caused any real anxiety although it ran a full three weeks' course. On May 8th the patient was up and about and on ordinary diet.

Remarks by Dr. THORNTON.—The steadily increasing successful result to be obtained by surgical treatment of the above otherwise fatal complication is now well established. The present case (the first successful one in South Africa) affords an example which it is hoped may be calculated to encourage others to adopt similar measures. The following points of interest may be noted in connection with the case: the occurrence of perforation in a mild case apparently just about to enter on convalescence and exhibiting a clean tongue and a hollow abdomen; the premonitory signs of peritoneal pain and quickening of the pulse from 2 P.M. until actual perforation about 6 P.M.—"preperforative stage"; the absence of any apparent change in the liver dulness after perforation and the explanation in the condition found on opening the abdomen—viz., a pinhole perforation practically sealed by inflammatory lymph; the steadily increasing pulse-rate along with a persistent subnormal temperature—72 at 2 P.M and 126 at the time of the operation (9 P M); and the production at so early a stage of the "peritoneal" look on palpating the abdomen and its spontaneous occurrence also.

No case could have been more hopeful and that recovery did occur is not surprising. Unfortunately a similarly favourable condition is not always found even when an early diagnosis of perforation is made and an operation quickly resorted to. We have had several cases operated on quite as early and have found a large perforation with a free escape of liquid fæces spreading widely amongst the intestinal coils. In such cases I imagine that recovery is the exception. Finally, I may be allowed to remark that in my opinion there ought to be no hesitation in giving aperients and if necessary stronger purgatives within two or three days of the operation if there be signs of increasing distension. I believe the value of this is well recognised after laparotomy for other reasons.

Remarks by Dr. SANDERS.—The successful issue of this case was, I believe, due to the attack being of a mild type, the perforation speedily recognised, and an operation quickly resorted to. Chloroform was given and a median incision was made. The first coils of intestine seen appeared normal but on displacing these other coils were observed showing a general fine injection of their peritoneal coat and still later others with traces of inflammatory lymph adherent to them. On withdrawing a coil thus affected a portion was soon found in which ulcers could be seen. One of these had extended through to the peritoneal coat and on its outer surface was some adherent lymph. On removing this a fine perforation was seen from which bubbles of gas could be expressed. A second ulcer also appeared nearly to have perforated. Both ulcers were invaginated by pressing a probe over them in the long axis of the bowel and the edges of the groove thus formed were sewn together by several Lembert's sutures. The peritoneal inflammation was fairly extensive but there was little or no fluid between the intestinal coils and there was no recognisable sign of any real fæcal contamination. The affected area was well washed with hot saline solution and a counter opening was made in the right flank. A drainage-tube was passed through this from the abdominal incision. On the first two days after the operation hot saline solution was passed through this tube but as there was no discharge this irrigation was discontinued and the drainage-tube was removed. The wound healed quickly and well.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Protracted and Recrudescent Infection in Diphtheria and Scarlet Fever.

A MEETING of this society was held on June 14th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. ARTHUR NEWSHOLME read a paper on Protracted and Recrudescent Infection in Diphtheria and Scarlet Fever. He first detailed instances of cases of each of these diseases illustrating the occurrence of protracted or recrudescent infection in different circumstances: when there had been (*a*) contact or (*b*) no contact with other acute cases of the same disease; (*c*) when there had been several weeks' interval between the occurrence of the "return" case and the latest exposure of the infecting patient to the infection of other patients; and (*d*) when the patient had been treated alone at home. The various explanations of "return" cases were considered, including, besides the ordinary ones of failure of disinfection or a true "return" of infection, the possibility of a relapse of the original disease, of latent microbism, or of missed cases. Instances were given of diphtheria of infectivity continuing over 110 days or even longer. Instances of the somewhat neglected infectivity of ear discharges in diphtheria were given. The following considerations were emphasised: 1. "Return" cases are relatively rare and do not seriously invalidate the utility of isolation hospitals. 2. These cases occur generally, but not always, in connexion with rhinorrhœa and otorrhœa. 3. Accurate hospital records of complications are needed. 4. Post-isolation supervision of both home-treated and hospital-treated cases of scarlet fever and diphtheria is required. 5. The rhinorrhœa, which is the main index of protracted infectivity, is oftenest already present when isolation is commenced. 6. In some instances dormant infection is again roused into activity by catarrhs and the like. The close analogy between diphtheria and scarlet fever, as regards both protracted and recrudescent infection, was urged. The conception of protracted infection in diphtheria had been stated by Greenhow and Gresswell, but in scarlet fever it had not been recognised until recently. There could, however, be little doubt that it had occurred long before the period of isolation hospitals and that it explained the persistent belief in the infectiousness of late desquamation. The bearing of these considerations on the hospital treatment of these diseases was next discussed and the proposition was based on the foregoing facts that "in scarlet fever, as in diphtheria, the occasional persistence of infection is a phenomenon in the natural history of the disease, irrespective of, and in the main uninfluenced by, the external conditions to which patients are ordinarily subjected." This view was not, in Dr. Newsholme's opinion, contradicted by the apparent statistical excess of "return" cases in hospital experience. No statistics making due allowance for varying conditions of age and susceptibility had hitherto been made on a sufficiently large scale. The possibility of *non ceteris paribus* had not been borne in mind. It was reasonable to believe that the scarlatinal germs multiplying in the patient himself and collecting on the rhinorrhœal lesion with which the patient was usually admitted would be in large numbers and be more efficient to produce secondary infection than the relatively minute number that could obtain ingress from other patients. The notion that increased infectivity was caused by hospital aggregation was borrowed from the like theory for small-pox and in both instances was a theory to support a theory. The bearings of relapses of scarlet fever on this theory were discussed and the analogy of enteric fever, in which such relapses could not be caused by fresh external infection, was pointed out.

Dr. E. W. GOODALL said that he could cite many cases of protracted infection in diphtheria and scarlet fever and believed that it was well known that a patient who developed scarlet fever during convalescence from diphtheria was very liable to a relapse of his primary disease. He agreed that the protraction of infection was not due to hospitalism and that there were more instances of the kind in cases treated at home than was generally supposed. He laid stress on the part played by "secondary throats" as well as by mucous discharges in producing "return" cases and was of the opinion that desquamation was not a dangerous source of infection. Rhinorrhœa sometimes occurred for the first time after the patients had returned to their homes and in these cases was often responsible for the infection of others. It was not proved that complications in scarlet fever and diphtheria were more common in hospital than in private practice.

Dr. P. CALDWELL SMITH said that in his district he had had in 1902 4·5 per cent. and in 1903 6·5 per cent. of "return" cases and he believed that something would have to be done in order to reassure the public feeling in the matter.

Dr. W. J. R. SIMPSON did not agree with Dr. Newsholme that protracted infection was a part of the natural history of the pathology of these diseases. At a hospital in connexion with the Pasteur Institute in Paris patients suffering from various infectious fevers were separated in cubicles with glass partitions and one nurse attended several different cases, taking very careful measures in the way of disinfection. He was of the opinion that the ward system was in some degree responsible for "return" cases.

Dr. W. BUTLER did not think that hospitalism was alone responsible for "return" cases and stated that there was no evidence of medical men, nurses, or attendants carrying infection outside fever hospitals. He had had considerable experience of home-treated cases carrying infection for protracted periods and had found that convalescent homes to which only uncomplicated cases had been sent were as great, or greater, sources of secondary infection as hospitals where acute and complicated cases were aggregated.

Mr. D. L. THOMAS in investigating outbreaks of diphtheria for the late London School Board had come to the same conclusion as Dr. Newsholme as regards the part played by protracted infection and urged the more continuous supervision and bacteriological examination of cases.

Dr. C. K. BOND argued against the present hospital system but thought that the importance of "return" cases was exaggerated.

Dr. NEWSHOLME replied.

OPHTHALMOLOGICAL SOCIETY.

Primary Optic Atrophy due to Lead.—Optic Atrophy after Post partum Hæmorrhage.—Optic Glioma.—Microphthalmos.—Exhibition of Cases and Specimens.

AN ordinary meeting of this society was held on June 9th, Mr. JOHN TWEEDY, the President, being in the chair.

Mr. SIMEON SNELL (Sheffield) related a case of Primary Optic Atrophy due to Lead occurring in a boy aged 16 years. The sight had commenced to fail for rather more than a year before the patient was first seen in October, 1903, and had rapidly become worse during the past three months. The vision was: right, $\frac{3}{60}$; and left, $\frac{1}{60}$; both optic papillæ were white and atrophic but did not suggest preceding neuritis. The family and personal histories were good. For two or three years the boy had worked as a file-cutter which exposed him to the influence of lead and he had the ordinary symptoms of lead poisoning. The optic atrophy was, in Mr. Snell's opinion, due to this cause and all other causes had been eliminated. Mr. Snell, after mentioning a similar case, stated that among file-cutters he had observed several instances in which the optic nerves were affected either directly by the lead or in association with kidney or brain disease.

Mr. SNELL related the following case of Optic Atrophy after Post-partum Hæmorrhage in a woman, aged 28 years, who was seen last February a few days after recovery from puerperal mania. Both papillæ were atrophied but there was no evidence of past neuritis. There was no perception of light and the pupils were dilated and motionless. On Oct. 3rd, 1903, she was delivered of her first child at full term, but an hour afterwards she had hæmorrhage and although the amount lost was not very great yet she had never seemed really to have recovered from it. It was doubtful when the failure of sight had commenced but it had been suspected for some time. She had probably not seen at all for two months. There was no albumin nor throughout the pregnancy anything to suggest kidney disease. Mr. Snell referred to a previous case he had seen in which the sight was greatly affected by the same cause and he also alluded to cases collected by Chevallereau.

Mr. SNELL also narrated the following case of Optic Glioma. A baby, aged one year and ten months, was

first seen on April 1st, 1897, when glioma of the retina was diagnosed. One eye was excised on April 7th and the tumour was found to be confined to the globe but was rather large. On Jan. 7th, 1899, the child was again seen with a similar condition in the other eye. This was excised on March 1st and at the present time the child was alive and well. Mr. Snell referred to the small number of cases in which both eyes had been removed for glioma without a fatal result. Other cases related were as follow. A girl, aged four and a half months, was sent to Mr. Snell on Dec. 18th, 1903, with glioma of the right eye; the eye was removed on Dec. 22nd and the growth found to be confined to the globe which it nearly filled; there was no recurrence. Another member of the same family had suffered from glioma of both eyes, which had proved fatal, the parents having refused to allow the removal of both eyes; there was one other child between these two who was alive and healthy. Mr. Snell mentioned that until recently no instances had been published in which glioma had occurred in more than one member of the same family. Up to the present time three observers besides himself had recorded cases.—The PRESIDENT, Mr. A. STANFORD MORTON, and Mr. C. DEVEREUX MARSHALL mentioned cases which they had seen of glioma bearing on the points brought forward by Mr. Snell.

Mr. M. STEPHEN MAYOU gave a lantern demonstration of the Anatomy of Three Cases of Microphthalmos which he had examined.

Cases and specimens were shown by Mr. LOUIS WERNER, Mr. E. E. HENDERSON, Mr. G. W. ROLL, Mr. E. W. BREWERTON, and Dr. RAYNER D. BATTEN.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on June 8th, Dr. N. T. Brewis, the President, being in the chair.—Sir J. Halliday Croom read a paper on Cæsarean Section for Eclampsia with two cases. Van den Akker in 1875 was the first to carry out Cæsarean section in a case of eclampsia combined with contraction of the pelvis in the first degree and with a successful result. Sir Halliday Croom's first case was that of a primipara, aged 20 years. She had been well till the day previous to her admission into hospital when she suffered from slight headache; there was no appearance of œdema. On the day of admission she had vomited for some time and then frequent convulsions came on and she was in a comatose condition on admission. Croton oil, pilocarpine, and hot-air baths were given and copious perspiration was induced. Chloroform was administered to lessen the severity of the convulsions but it did not prevent them. The urine was two-thirds albuminous. The vagina was very narrow and extremely small, the fœtal head was high in the pelvis, the os uteri was small, and the cervix was thick, tense, and hypertrophic. The cervix was absolutely undilatable either by the fingers or by instruments. Barnes's bags and Hegar's dilators had no effect. Bossi's instrument was then unknown in this country. As the convulsions still continued, Cæsarean section was decided on as this offered the only hope for the woman and the best chance for the child. The operation was performed in the ordinary way. The child was saved but the mother died six hours after the operation after a severe convulsion. There was extreme cloudy swelling of the kidneys found with early catarrhal nephritis. The second case was that of a primipara, aged 46 years, who had an eclamptic seizure shortly before labour set in. As labour advanced the fits became worse and profound coma supervened. When Sir Halliday Croom saw her the cervix was found to be thickened enormously and hypertrophied and the os uteri was made out with difficulty. The pelvis was generally and uniformly contracted. The child was alive and it was important to save its life for succession reasons. There was no hope of dilating the os in a reasonable time and the mother's life was in peril, so Cæsarean section was performed. The child was saved; the mother rallied after the operation but died on the third day from a low form of pneumonia. Kettlite had collected 28 cases of Cæsarean section in eclampsia and Streckeisen 26 more. The former found a mortality of 50 per cent. and the latter one of 32 per cent. for the mothers, and for the children the former found one of 62 per cent. and the latter one of 30 per cent. It must always be remembered that only in the severest cases of eclampsia was Cæsarean section performed. In eclampsia generally the maternal mortality was estimated variously from 3 to 25 per cent. and the infantile mortality from 25 to 54 per cent. Sir Halliday Croom then discussed the different theories of eclampsia, that of auto-intoxication, of uræmia, anæmia and œdema of the brain, pressure on the vessels of the renal system, acetonæmia, microbes, and hepato-toxæmia. The kidneys were mostly diseased; in 98 per cent. of the cases albumin was present in the urine. Recent experiments on animals had shown that the urine and serum of eclamptic women produced negative results. As regards treatment, owing to the special excitability of the nervous system in pregnant women any treatment that would anticipate, avoid, or shorten labour must be the best for the woman. The present knowledge of the causation and pathology of eclampsia was very unsatisfactory and could afford no reasonable basis for treatment. It was due to some toxic material in the blood and the great point was to favour the elimination of the poison; this was done by various means and the convulsions were controlled by chloroform, chloral, and morphine. The main point was rapid delivery. In the great majority of cases the fits ceased on delivery; therefore rapid delivery was desirable. There were four methods: Duhrssen's cervical incisions, dilatation by the dilators of Bossi and Fommer, vaginal Cæsarean section, and Cæsarean section proper. These were discussed in detail. Cæsarean section proper was justified in eclampsia mainly to save a living child, where the woman was in extreme peril and where it was probably impossible to deliver a living child through the natural passages.—The President, Dr. R Jardine (Glasgow), Dr. D. Berry Hart, Dr. James Ritchie, Dr. J. W. Ballantyne, Dr. J. Haig Ferguson, Dr. J. Lamond Lackie, Dr. H. Oliphant Nicholson, and Dr. A. D. Webster made remarks on the paper and Sir Halliday Croom replied.—Dr. Hart read a note on Tubal Abortion. After pointing out that tubal abortion was one of the most frequent disturbances occurring in tubal gestation he narrated two cases where he had operated for this condition. In the first the collapsed chorion was found in the pelvis and also a clot of the size and shape of a billiard ball evidently expelled from the tube. In the second case the patient had lost a large amount of blood and in the pavilion of the right tube he found the gestation, of the size of an egg, adherent all round, with about a half projecting free into the peritoneal cavity. Blood had also dissected its way extraperitoneally towards the rectum and ruptured there into the peritoneal cavity. The tube was removed and the pelvis was tamponed with iodoform gauze passing into the vagina. The patient, however, sank on the third day from anæmia and cardiac failure. He considered that in the production of tubal abortion there was, first, extravasation of blood between the gestation sac and its tubal attachment due to the phagocytic action of the trophoblast, and that the gestation itself became converted into a mole from blood extravasation between the amnion and the chorion. The "mole," if completely detached and if the ostium abdominale was patent, might then be expelled by blood effusion and tubal muscular action into the pelvis, producing complete tubal abortion. The same mechanism might account for incomplete tubal abortions as in the second case, but possibly this specimen might really be an infundibular pregnancy simulating incomplete abortion.—Sir Halliday Croom, Dr. Ballantyne, and Dr. Haig Ferguson discussed the paper and Dr. Hart replied.—Professor J. A. C. Kynoch (Dundee) showed Two Vesical Calculi, the nuclei being formed by hair from a perforating dermoid tumour of the left ovary.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—The annual extra-metropolitan meeting of this society was held at Glasgow on May 21st, Dr. Thomas Barr, the President, being in the chair.—An interesting demonstration on the Development of the Mastoid and the Tympanic Plate was given by Dr. J. Cleland, in the course of which he pointed out that, contrary to the generally received description, the upper part of the outer surface of the mastoid was not formed by the descending plate of the squama. This descending plate did not extend beyond the suprameatal spine, and the so-called "squamo-mastoid suture" was formed by the entrance of a row of branches of the posterior auricular artery into the substance of the mastoid bone.—Notes of a case of Otitic Cerebellar Abscess, in which absence of the mastoid antrum from pathological changes was observed, were read by Dr. Peter McBride. Owing to an apparent improvement following the mastoid operation exploration of the brain was postponed. At the necropsy pus was found over the tegmen tympani and in the occipital lobe as well as in the cerebellum. The tympanic attic and aditus were present but

the antrum was entirely obliterated.—The case was discussed by Dr. Urban Pritchard, Dr. J. Kerr Love, Dr. H. Tilley, Mr. Arthur H. Cheatle, Mr. Charles A. Ballance, and Mr. Hugh E. Jones. In the opinion of the majority of speakers the antrum was always present in undiseased mastoid bones but it might be reduced to very small dimensions by prolonged osteitis.—Mr. R. H. Parry related an operation for Section of the Eighth Nerve for Severe Tinnitus Aurium and said that he undertook this operation because the ordinary methods of treatment had been tried for several years by different aural surgeons and because the patient declined any operation which could not be considered final, and after fully explaining to him that it was to be regarded as more or less experimental. The internal auditory meatus was reached by turning down a bone flap immediately over the ear, separating the dura mater over the petrous bone, and chiselling into the meatus through its superior wall. The result showed partial relief from tinnitus, absence of vertigo, complete deafness, and paralysis of the facial nerve. "Facial-accessory anastomosis" was subsequently performed with a good result but with the usual drawbacks of associated movements of the shoulder.—Mr. Ballance thought that it was easier to reach the nerve through the cerebellar fossa, between the dura mater and the brain; by this method (in the cadaver) the facial nerve could be seen and avoided. He preferred facial-hypoglossal anastomosis to the operation selected, because the centres of these nerves were more nearly related and the associated movements were less annoying.—The paper was discussed also by Dr. Love, Mr. P. M. Yearsley, and the President.—Mr. Richard Lake related a successful case of Removal of the Semicircular Canals on one side for the relief of Unilateral Vertigo, a full report of which appeared in THE LANCET of June 4th, p. 1567.—Dr. W. Milligan remarked that he had performed this operation three times with one partial and one complete success.—Dr. J. H. Nicholl, in his paper on Indications for Operative Interference upon the Lateral Sinus and Internal Jugular Vein, with illustrative cases, classified the operations as follows: 1. Obliteration of the sinus (*a*) on account of some involvement of the walls or contents of the sinus itself; and (*b*) on account of some affection of the jugular vein. 2. Ligation with or without excision of the vein (*a*) on account of some affection of the vein itself, wound of the vein, or involvement in a mass of glands; and (*b*) disease or injury of the sinus. 3. Ligation of the vein as a preliminary to mastoid operations (*a*) where cervical glands are enlarged (tuberculous); and (*b*) where the disease *probably* extends to the sinus.—Papers by Dr. A. B. Kelly, Dr. J. Galbraith Connal, and Mr. Yearsley were held over for want of time.—The following cases and specimens were exhibited:—The President: A case of Tempero-Sphenoidal Abscess operated on by Sir William Macewen 17 years ago.—The President and Dr. Nicholl: (1) Cerebellar Abscess operated on by Dr. Nicholl six years ago; and (2) case of Pulsating Tinnitus unrelieved by ligation of vessels.—The President and Dr. Connal: Two cases of Removal of large Exostoses of the External Auditory Meatus by the post-auricular route.—Dr. Connal: (1) Acute Empyema of Mastoid with giddiness and vomiting, and (2) Relief of Facial Paralysis by Radical Mastoid Operation.—Dr. Kelly: Cases of Insufficiency of the Hard and Soft Palate.—Dr. W. S. Syme: Radical Mastoid Operations, two cases; in one no antrum was found; after the other packing was discontinued on the twelfth day with a good result.—Dr. R. Fullerton: Patient after operation for Cholesteatoma.—Mr. Cheatle: Temporal Bones showing variations in positions of the Antrum and Jugular Fossa.—Dr. Love: (1) Stereograms illustrating the Anatomy of the Ear and Nose; (2) Edelmann's continuous tone series; and (3) chart of examination of 33 deaf mutes.—Dr. A. A. Gray: Microscopic and Macroscopic Anatomical Preparations.—In the absence of Professor J. G. McKendrick a demonstration was given in the Physiology Lecture Theatre of the University by Dr. W. Colquhoun of Experiments to illustrate Recent Researches on the Physical Nature of Vowel Tones and their Bearing on Movements of the Tympanic Membrane.—The members and visitors were most hospitably entertained to lunch and dinner by the President.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on June 9th, Professor John W. Taylor, the President, being in the chair.—Mr. Charles Ryall showed, for Mr. F. Bowreman Jessett, who was unavoidably absent, a Soft Myoma of the Uterus, weighing 26 pounds and in parts undergoing calcareous degeneration. The tumour was intimately adherent to the abdominal parietes for three inches on each side of the middle line, from the pubes to above the umbilicus, and a previous attempt to remove it in a London general hospital had been abandoned. As the patient was past the menopause and the tumour was continuing to grow Mr. Jessett decided upon its extirpation. The woman suffered from shock which was dealt with by intravenous transfusion and by leaving some saline solution in the abdomen but otherwise she bore the operation well. The tumour was not adherent in the pelvis.—Dr. H. Macnaughton Jones, for Dr. Andrew Downes of Philadelphia, exhibited a set of Electrothermic Hæmostatic Angiotribes and explained their construction, method of action, and effect. These instruments had been favourably reported upon by Hirst, Charles Noble, Bovée, and Goldspohn, and Dr. Downes himself had collected upwards of 500 cases in which hæmostasis had been satisfactorily secured by them.—Dr. C. H. F. Routh, Dr. Heywood Smith, Dr. R. H. Hodgson, Dr. S. J. Aarons, and the President joined in discussing the exhibits.—Mr. E. Stanmore Bishop then brought forward the question of the Prevention of Post-operative Ventral Hernia and gave briefly the details of the four cases which occurred in his list of more than 350 abdominal sections. After emphasising the necessity of securing the firm union of the peritoneum, fascia and skin, especially of the combined tendons of the transversalis and oblique muscles, he discussed the various methods which had been or might be employed for this purpose, including Milton's method and a modification of it which eliminated the difficulties sometimes caused by kinking of the secondary thread, and illustrated his remarks by diagrams. He then discussed the various materials employed for sutures and exhibited some glass stretchers which he had had made by Messrs. Woolley of Manchester for sterilising and preserving them; by the aid of these stretchers a perfectly straight thread was obtained for each suture or ligature while the sterilising medium had free access to all parts of the material.—Mr. Bishop also showed a Copper Case made Watertight by Asbestos Packing for boiling catgut sutures in cumol and xylol. Dr. Macnaughton-Jones said that the method described diagrammatically by Mr. Bishop was the one he himself adopted and so far as he knew no hernia had occurred after abdominal section in any of his own cases save three; in one the wound was deliberately opened twice by the patient who was mentally afflicted but was successfully closed by a third operation; in another the protrusion was so slight that the patient, three years after the operation, refused any surgical treatment; and the third case was operated on under such desperate conditions that the through-and-through suture had to be employed.—Mr. Ryall did not think that post-operative ventral hernia was always reported to the operator. He attributed much greater importance to the union of the fascia than to that of the peritoneum, muscular tissue, or skin, and thought that the neglect of close approximation of the posterior sheath of the rectus was sometimes the cause of hernia. Prolonged rest after operation was an important means of prophylaxis.—The President said that post-mortem evidence had convinced him that immediate and accurate union of the peritoneum, as well as of the fascia, contributed materially to the solidity of the abdominal scar. His practice was to unite the peritoneum with fine silk continuous suture and to insert interrupted sutures through the rest of the abdominal wall, which, however, were not tied until the fascia had been accurately united by fine silk continuous suture for its whole length. The interrupted sutures were withdrawn after lending their support to the buried silk for ten days. In only three of his cases had the silk given any trouble and that was before he knew the best way of sterilising it by boiling it in a solution of benzene.—Mr. Bishop, in reply, said that while it was desirable that all buried sutures should be absorbable after they had done their work, neither silk nor catgut was so. If they could rely on catgut being absolutely germ free the difficulty would vanish but if used thin it was prone to give way and it was hardly possible to insure the sterilisation of the thicknesses (No. 8) sometimes employed.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on June 3rd, Dr. Seymour Taylor, the President, being in the chair.—Mr. J. Jackson Clarke read a paper entitled "Paralytic Deformities: their Modern Treatment, its Aims and Limits." He said that a wide range of nerve lesions, whether cerebral, spinal, or peripheral, led to disabilities and deformities that required

surgical treatment. Infantile paralysis and cerebral spastic paralysis provided the two largest groups of paralytic deformities. The chief point in the natural history of infantile paralysis was its tendency to improve. After about nine months this improvement ceased and therefore medical treatment should not be prolonged beyond that period. Some surgeons had recently stated that the medical treatment of infantile paralysis should be limited to the first few days. In any case where deformity was threatened it would be wise to secure the coöperation of a surgeon early, as the judicious use of simple apparatus often assisted recovery and prevented deformity and the need for future surgical interference. In paralytic talipes equinus a simple tenotomy of the tendo Achillis was apt to be followed from lengthening of the scar tissue by a worse deformity—namely, talipes calcaneus, which required further operative measures for its correction. In some cases of infantile paralysis a talipes equinus was an advantage and should not be interfered with; in these cases there was a fair amount of power in the muscles of both sides of the leg and the talipes equinus compensated for the shortening. Tendon transplantation should be limited to cases in which there was a fair residuum of muscular power and in which the deformity could be corrected at the time when the transplantations were made. Lange's artificial tendons of silk were of great assistance in some cases of tendon transplantation. In cases of cerebral spastic paralysis surgeons endeavoured to obtain an equalisation of power in the opposed groups of muscles. In the slighter cases suitable instrumentation following muscle stretching under anæsthesia was sufficient but in the more pronounced grades tendon lengthening, tenotomy, tenectomy, or myectomy were necessary.—The President deprecated any active treatment in infantile paralysis so long as pyrexia existed, as this indicated that active cell injury, and possible destruction, was still present.—Mr. E. Percy Paton said that arthrodesis ought not to be performed on both hip and knee in cases of flail-like lower limb; it was better to fix the ankle and to rectify the trouble in the knee by some such means as tendon grafting and to give the increased support that might be necessary by means of a well-devised instrument.—Mr. Laming Evans said that in the great majority of cases of spastic paraplegia he preferred exsection of the adductor tendons to simple tenotomy but in spastic equinus lengthening of the tendo Achillis gave the best results.

Reviews and Notices of Books.

Physical Deterioration, its Causes and the Cure. By A. WATT-SMYTH. London: John Murray. 1904. 8vo, pp. 318. Price 6*s.* net.

Mrs. Watt-Smyth has provided us with an interesting book the title of which is perhaps hardly justified by the contents. She tells us in her preface that she has brought together the main facts concerning the causes of physical deterioration which have long been recognised by those acquainted with the people of slums and she has certainly enumerated many conditions which are obviously unfavourable to health and to efficiency. But the word "deterioration" means a good deal more than that a certain proportion of the community falls below some ideal standard of strength and activity. It means a growing or making worse; and it is easy to show, even from Mrs. Watt-Smyth's own descriptions of various beneficial agencies now in operation, that in many quarters there are very definite efforts after improvement. It is impossible to deny, of course, that the causes of debility which Mrs. Watt Smyth enumerates are potent ones and that slum dwellings, overcrowding, want of ventilation, want of proper food, want of exercise, over-teaching, overwork, and the like, are collectively responsible for a vast aggregate of stunted growth and of defective energy. But there is no evidence, so far as we can see, that these evils are either increasing in intensity or are affecting a larger number of persons or families than were affected by them a few years ago, and perhaps with the single exception of the increasing proportion of town dwellers there is much reason to hope and to believe that they are undergoing gradual and not very slow amelioration. Direct evidence, unfortunately, is not attainable, no systematic weighing and measuring of children having at any time been undertaken in this country, but we have evidence in abundance that the causes of disease and debility have been for many years in course of steady diminution and removal and we are entitled to believe that the effects will disappear in at least a corresponding proportion. If we desire to institute a comparison between the present and the past we must turn to the evidence of the condition of the children who were apprenticed to manufacturers before Lord Shaftesbury had intervened for their protection—children many of whom had scarcely sufficient rags to cover their nakedness and who fought with dogs and pigs on dunghills for any refuse which could stand between them and starvation. Coming to more recent times we may turn to Sir John Simon's ninth report to the Privy Council for a detailed account of the effect already produced in 1866 by works of sanitary improvement in England and we shall find there abundant evidence of such a diminution of infantile mortality in the 24 towns from which the figures are derived as to render it certain that they at least must have been definitely on the road to improvement. The statistics of recruiting, to which appeal has constantly been made by alarmists, contain nothing which can be described as evidence, for it is certain that the class of persons offering themselves would be very materially influenced from time to time by the state of the labour market, and that when employment of other kinds was plentiful the mere wastrels among would-be recruits would bear a larger proportion to the able-bodied than at other times. Against vague impressions and questionable he-saids and they-saids we have to balance an undoubted diminution of the national death-rate and of the prevalence of many serious diseases.

At the same time, while we are unable to share to the full extent in the opinions which find their most definite expression in the word "deterioration" we are not in the least degree disposed to deny the prevalence of many evils by which the physique of the working classes must of necessity be injuriously affected or to dispute the value and the importance of any efforts by which these evils may be removed. Mrs. Watt-Smyth's book contains an admirable summary of them and an admirable account of what is being done, and of what she thinks might be done, for their diminution. A very prominent place among them is held, of course, by the ghastly ignorance about domestic economy which prevails among the working classes generally and which is the chief tangible result of 30 years of compulsory education. Next to this comes the curse of drink, itself often the direct offspring of ignorance and at least to some extent the consequence of superstitions about the effects of alcohol which retain their hold upon the public mind notwithstanding scientific and practical demonstrations of their misleading character. More than half of the occupants of any ordinary omnibus would at any time show, by their acts if not by their professions, that they regarded alcoholic drinks as warming and strengthening, and those who would teach them better are handicapped by a natural reaction against the extravagances of many teetotalers. Next to drink as a cause of impaired physique among the poor we should be inclined to place dirt, sheer bodily filthiness. With possible exceptions in the cases of Tibet and Lapland we are compelled to admit that the English working classes are probably the dirtiest bipeds in the world, alike in their clothes and in their persons, and that they display themselves in public, and even travel by public conveyances, in conditions which would not be tolerated in any other civilised country. In America, for example, working men in factories demand and are supplied with baths and dressing rooms, and they

wash and change their clothes before they leave their work and go into the streets. Nothing like English working-class dirt is ever seen in public on the continent of Europe, unless in its far eastern portions; and dirt is prejudicial to health not only by its direct physical operation but in a still greater degree by reason of the absence of self-respect which it entails and which removes from the dirty man or woman at least one safeguard against drunkenness and against misconduct. Much of the dirt of the English labourer is at least partly due to his habit of dressing himself in a caricature of the clothes of the more leisured classes; and the introduction of the continental blouse would almost alone be sufficient to produce a beneficial change in his condition. Many of the reforms advocated by Mrs. Watt-Smyth are of a kind which could only be carried into effect by a combination of strenuous effort with improved legislation, but we think we could mention two for which the way is open. If the Local Government Board would secure fixity of tenure for medical officers of health the sanitation of the country would soon be enormously improved and the health of the poorer classes would be improved in a corresponding degree; and if the county councils throughout the kingdom would make proper use of the powers recently conferred upon them, and would see that the education of poor children, especially of girls, was of a kind calculated to be useful to them in after life, and not as useless as it has been hitherto, the axe would be laid to the root of many of the evils of which Mrs. Watt-Smyth has only too much reason to complain. While we cannot in all particulars agree with her we have no hesitation in commending her book to the careful consideration of all social reformers.

The Practice of Obstetrics. By J. CLIFTON EDGAR, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College. With 1221 Illustrations, many of which are printed in Colours. London: Rebman, Limited. 1903. Pp. 1111. Price 30s.

THIS work is of a most ambitious character and does great credit to the industry of its author. Dr. Edgar's aim has been to present the "subject of midwifery from a practical and clinical standpoint, so that it will best facilitate the requirements of the student of medicine and the active obstetrician." Several innovations are to be found in the book. At the beginning of each part a table of contents has been placed and to insure ease of reference each part has been divided into sections, each of these in turn being headed with a table of its subject matter. In the section dealing with the subject of examination during pregnancy the various methods of carrying out pelvimetry are very fully discussed and a description is given of pelvigraphy or the method of taking a series of measurements of certain pelvic diameters and thus plotting out the size of the various pelvic planes. The interesting subject of cliseometry, or the method of measuring the size of the angle of inclination of the planes of the pelvic inlet and outlet, is also included and the apparatus devised by Neumann and Ehrenferst for carrying this out is figured and described. The various methods of practising cephalometry are given and, as Dr. Edgar points out, the late Professor Varnier succeeded in obtaining, after some three years of effort, a clear view by Roentgen-ray photography of the contour of the fœtal head in a woman seven months pregnant, so that he thought it would be possible by this means to determine the size of the fœtal head, its manner of engagement, its position, and its degree of flexion in the later months of pregnancy. It is greatly to be regretted that his death brought his studies on this subject to a premature conclusion.

The author has adopted a somewhat novel method in obtaining the illustrations for his sections on the mechanism of labour; those illustrating the engagement of the presenting part in the cervical canal were obtained by palpating with two fingers of the left hand and making a sketch with the right hand at the same time. He found that inspection was less satisfactory than palpation except in the case of face presentations. The illustrations of the engagement of the various parts of the fœtus in the vulva are drawn from flash-light photographs. An interesting feature in the work is the section devoted to the important question of the medico-legal aspects of obstetrics together with a chapter on Rape containing the results of examinations of 600 consecutive cases of this kind. It might be objected that such subjects are out of place in a text-book on Obstetric Medicine and if they had been inserted to the exclusion of more important matter no doubt such an objection would hold good but they have not been in this instance at any rate and after all the person most likely to be called upon for an expert opinion in a case of this kind is the obstetric physician. In discussing the important question of tubercle and pregnancy the author takes the view that pregnancy, even by itself, can render a healthy woman liable to become infected by the tubercle bacillus, and he argues that if this be admitted then the tendency will be much greater in the case of women predisposed to tubercle or who are or have been the subjects of latent tubercle or of apparent recovery from the disease. He would leave it for the future to decide whether pregnancy in the tuberculous woman should be interrupted as a routine procedure but he considers the prevailing tendency to persuade such women from marriage as serving in some measure to justify the interruption of a pregnancy which has already begun. It has been argued by some authorities that the induction of abortion in these cases is of no avail since the parturient patient is still more likely to succumb to the disease than if her pregnancy is allowed to continue, and while Dr. Edgar admits that the danger after delivery is undoubtedly very great yet he thinks that if the pregnancy is interrupted sufficiently early the result is likely to be good and the disease to be held in check to a decided extent. The question is one which certainly requires further consideration.

A very fair account of antenatal pathology is included and a section is devoted to the description of the various forms of fœtal monsters—decidedly a waste of space, we think.

The interesting subject of labour in elderly primiparæ is discussed at some length by the author. His observations have led him to the same conclusions as those of Courgenon of the Tarnier Clinic, that the influence of age on primiparity is that it slightly increases the length of the first stage of labour and that it somewhat increases the frequency of the indications for the use of forceps. Such conclusions are, of course, contrary to those held by the majority of authors and are in direct contradiction to the statistics published by some of the earlier observers. The subject is an important one in this age of late marriages and a low birth-rate, and the author's conclusion is no doubt the correct one—viz., that if labour is more severe or protracted in the elderly it is because of conditions which interfered with early marriage or conception. Dr. Edgar's writings on the subject of posture in obstetrics are well known and it is not surprising therefore to find that he has entered very fully into the matter and that the chapter is illustrated by some good reproductions of drawings.

While there is much in this book of great value we cannot by any means agree with all that the author either teaches or practises. For instance, we are told, in the treatment of placenta prævia occurring after the twenty-eighth week of pregnancy, that a case of this kind should never be left for natural expulsion of the child to occur after the performance of version—teaching with which we entirely disagree. The best results in the treatment of placenta prævia are to be

obtained by the performance of podalic version without the immediate extraction of the child. A few pages before—viz., on p. 228—the author draws attention to the danger attending the practice of rapid delivery and yet he recommends it. In the consideration of the treatment of accidental hæmorrhage nothing is said of the method of employing a Champetier de Ribes bag in severe cases where the membranes are still unruptured and sufficient stress is not laid on the good results obtained by the Dublin School by their method of plugging the vagina for severe external hæmorrhage before rupture of the membranes. We notice one curious omission in the book—viz., there is no detailed account of hæmatoma of the vulva.

There is much that is of interest in this volume and while the general style is, perhaps, hardly clear and dogmatic enough for the student it should be of value to the practitioner and obstetric physician. The illustrations—1221 in number—are well chosen and beautifully reproduced. The work will undoubtedly enhance the reputation of its author and is one which we can recommend.

A Method for the Identification of Pure Organic Compounds by a Systematic Analytical Procedure based on Physical Properties and Chemical Reactions Vol. I. By SAMUEL PARSONS MULLIKEN, Ph.D., Instructor in Organic Chemistry and Organic Analysis at the Massachusetts Institute of Technology, Boston. London: Chapman and Hall, Limited; New York: John Wiley and Sons 1904. Pp. 264. With three coloured standards. Price 21*s.*

IT is hardly possible to offer any criticism on a work such as this which deals so completely with constants and the physical behaviour and chemical reactions of compounds. The work is deserving of the highest praise and will occasion universal admiration for the monumental labour which its compilation must have entailed. The first volume contains classified descriptions of about 2300 of the more important compounds of carbon with hydrogen and with hydrogen and oxygen. The author's plan in the classification of compounds and in general analytical procedure is to arrange them in genera, orders, and various minor groups. This system is thus similar to that adopted in biology. It is necessary to understand the underlying principles of this classification before the general analytical scheme can be intelligently applied. The author calls the tests which have for their object the determination of the order of a species—that is, tests for the elements—ordinal tests. These are treated in Chapter II., which therefore relate to the detection in an organic compound of the elements carbon, hydrogen, sulphur, nitrogen, phosphorus, chlorine, bromine, and iodine. Again, he defines a genus as a group of species characterised by showing a common behaviour in certain prescribed and carefully defined generic tests which, with few exceptions, are based on chemical reactions rather than differences in physical properties. Generic tests are applied until the genus of the compound is ascertained. Aldehydes, for example, would give a colour reaction with a fuschine solution decolourised by sulphurous acid and carbohydrates would be tested for by the Molisch carbohydrate reaction which consists in adding to the substance a little water and two drops of a 10 per cent. chloroform solution of alpha naphthol. One cubic centimetre of concentrated sulphuric acid is then allowed to flow slowly into this mixture when, if a carbohydrate is present, a red ring will appear within a few seconds at the line of separation between the two layers. The colour is due to the formation of a furfural naphthol product. In this way the compounds are classified into the following genera: (1) aldehydes, (2) carbohydrates, (3) acids, (4) phenolic compounds, (5) esters, (6) acid anhydrides and lactones, (7) ketones, (8) alcohols, and (9) hydrocarbons. Following the consideration of the compounds so classified, which is spread over 11 chapters of the book, comes the classification of the coloured compounds in Chapter XII. of Order 1 (the compounds of carbon and hydrogen and of carbon, hydrogen, and oxygen). In the concluding chapter (XIII.) special methods, apparatus, and reagents are dealt with, and we have here an excellent illustration of the author's attention to detail and care in carrying out the tests. When it is considered that the physical constants of some 2000 compounds are given an idea of the enormous task of compilation will be gained. We understand that the second part of the work, which describes the compounds coming under Order 2 of the analytical system, is well advanced and finally it is proposed to issue a third volume which will provide for compounds of carbon with those elements which are not included in the first and second order. The author desires to base all the most essential portions of the descriptions of at least several hundred of the species of Order 2 on original or personally verified data and he appeals to those studying organic chemistry to coöperate in the work to the extent of placing at the author's disposal small samples of any of the less accessible nitrogen compounds which they may have prepared or collected. This work is clearly undertaken in the true spirit of one careful to a degree to place facts once and for all on record. We can think of no work of reference which can be more valuable to chemists and others engaged in the collateral sciences than that before us. The indexing is admirable and includes a formula group based upon the number of carbon atoms in the molecule of the compound. There is an excellent chapter on colour and the colour descriptions of the work are expressed in terms of the Bradley colour standard. This standard is printed on two cards placed in a pocket in the back cover of the volume. It contains 18 pure colours; and of derived tones there are 36 tints, 36 shades, and 12 medium "broken" colours. The volume is an excellent example of thorough, conscientious, and comprehensive work.

LIBRARY TABLE.

A Laboratory Manual of Physiological and Pathological Chemistry for Students in Medicine. By Dr. E. SALKOWSKI, translated by W. R. ORNDORFF, A.B., Ph.D. London: Chapman and Hall, Limited. New York: John Wiley and Sons. 1904. Pp. 265. Price 10*s.* 6*d.*—This is the authorised translation of the revised and enlarged edition of the work "Practicum der physiologischen und pathologischen Chemie," by Dr. Salkowski, professor in the University and director of the chemical laboratory of the Pathological Institute, Berlin. The translator, Dr. Orndorff, is professor of organic and physiological chemistry in Cornell University. This collaboration is sufficient to show the authoritative character of the work and the methods described bear evidence of a sound practical acquaintance with the details of laboratory manipulation. The book is essentially one for use in connexion with practical work at the bench. Its plan is quite simple, some 16 chapters dealing with the properties and examination of milk, blood, bile, urine, and food substances. Sections follow on quantitative analysis with simple examples, such as the determination of copper in copper sulphate, the estimation of aluminium in potash alum, and so on. Methods for the quantitative analysis of urine, fæces, milk, blood, and the gastric juice are next described. We find that the analytical processes are completely in accordance with modern investigations. The book will be a guide of undoubted practical value to the student in both the pathological and physiological laboratory.

A History of the Daubeny Laboratory, Magdalen College, Oxford. By R. T. GUNTHER, M.A., F.L.S., Fellow and Tutor of Magdalen College. London: Henry Frowde,

Oxford University Press Warehouse. 1904. Pp. 137. Price 5s.—This is a very interesting monograph recounting the circumstances in which the Daubeny Laboratory at Magdalen College was founded. Dr. Daubeny, who had been Professor of Chemistry since 1822, was chosen in 1834 to succeed Sibthorpe as Sherardian Professor of Botany. Soon after this appointment Dr. Daubeny applied himself to make the study of botany and chemistry more efficient than hitherto. In 1848 he determined to erect a lecture room and laboratory close to the physic garden and the College gave him leave to do so, agreeing to allow to him and his heirs or assigns the sum of £282, "being a moiety of the sum proposed to be laid out by Dr. Daubeny, in case the society shall at any time hereafter within the period of 20 years find occasion or think it proper after six months' notice to resume the whole of the grounds into their own hands, but after that time the College shall have the option of assuming it without any payment." The laboratory still exists and many men of mark have worked within its precincts. Amongst them may be mentioned H. G. Madan, Wyndham Yule, Pike, Jeffrey, Burdon Sanderson, Gotch, Lazarus Fletcher, Harold Dixon, and Veley. We are glad to learn from the preface, writen by the president of Magdalen, that the subsequent history of the laboratory which Daubeny founded and to some extent endowed continues to be interesting. Moreover, "it has at times somewhat anticipated the university teaching" and "has afforded a home and opportunity for many stray professors and students and been the scene of not a little excellent original research." With certain of the latter we are acquainted and more especially with the researches of Professor Veley. We are sure that Mr. Günther's compilation will be keenly appreciated by Magdalen men. A list of the writings of Dr. Daubeny and a register of the names of those persons who attended the chemical lectures of Dr. Daubeny from 1822 to 1867 as well as of those who have received instruction in the laboratory up to the present time are appended.

Life of Joseph Jordan, Surgeon, and an Account of the Rise and Progress of Medical Schools in Manchester, with some Particulars of the Life of Dr. Edward Stephens. By F. W. JORDAN, M.D. Durh. London and Manchester: Sherratt and Hughes. 1904. Pp. 135. Price 5s. net.—This book is dedicated to the memory of John Durham Bird, M.B., of Heaton Norris, partner and fast friend of the author. In putting forth this tribute of admiration for the originality, industry, and perseverance of a Manchester worthy whose great work was the germ of the provincial medical schools the author has been actuated by two motives—a desire to give to the present generation some idea of the early days of medical education in Manchester and a wish to place on record some particulars of the life of him who initiated it. The author was brought into frequent association with Mr. Jordan during the time that he was an apprentice to his nephew, James Stephens, and he has in his possession a number of papers written by Edward Stephens in 1859 for the purpose of supplying certain members of the House of Commons with the necessary information in their endeavour to obtain some mark of Her Majesty's favour for Mr. Jordan; he therefore felt himself specially qualified to undertake a work of this nature and he has received generous help from many sources. It was under the care of Mr. Simmons of Princess-street, a surgeon to the Manchester Infirmary, with whom he remained until he reached the age of 19 years, that Mr. Jordan laid the foundation of his abilities as a surgeon and anatomist. After completing his studies in Edinburgh under Sir Charles Bell and the celebrated Munro he joined the Royal Lancashire Militia, first as an ensign, in 1806, but as at this time there was a great demand for surgeons in the militia he became assistant surgeon to the battalion in the following year. In 1812 he was hard at work teaching anatomy in his "re-opened" school. In 1819, together with others, he established the Manchester and Salford Lock Hospital, to which he was appointed surgeon. In 1817 the Society of Apothecaries of London notified to Mr. Jordan that his certificate would in future be accepted by the board of examiners as in every way equivalent to those given by metropolitan teachers. This was a most important event in the history of the provincial medical schools. The medical student of the present day can hardly realise the difficulty in obtaining subjects for dissection in the days when, though a medical student was compelled to dissect in order to obtain his qualification to practise, the law stated that bodies should not be used for the purpose. The gruesome poem entitled "The Surgeon's Warning," which is reprinted in this book, will bring the whole state of affairs prior to the passing of the Anatomy Act vividly before the reader. The story of Mr. Jordan's election to the staff of the infirmary is graphically told. The excitement at the election was intense and resembled that of a parliamentary election. It cost Mr. Jordan £690. The expenses consisted chiefly in hiring vehicles to bring voters from the neighbouring towns. Mr. Jordan was a strong man with opinions based on what he had learnt in the school of experience. He was a good clinician, a cool operator, and was trusted and looked up to by the students as a sound teacher and a man of original thought. He was one of the founders of the Chetham Society in 1843 and of an antiquarian society called the Order of Rosicrucians or Brotherhood of the Holy Cross. This book contains the record of a singularly full life. Mr. Jordan's doings are certainly worthy of being enshrined in a volume such as has been produced by the author and we can recommend it for its style to those whom such works interest.

A Manual of Ambulance. By J. S. RIDDELL, C.M. Fifth edition. London: Charles Griffin and Co., Limited. Pp. 227. Price 4s.—We welcome another, the fifth, edition of this book, showing that it is in requisition, although the size and price place it beyond the use of the ordinary first-aid student. It is much to be desired that manuals intended for the use of first-aid students should be confined to giving enough knowledge to equip the student for his most useful work of rendering succour either in the street or the home. But we strongly deprecate the gradual increase in the size of these manuals due to the addition of matter quite outside the province of the first-aid student and encroaching upon the domain of the medical man. Nothing tends to do more harm to the "first-aid" movement than offering to unqualified and irresponsible persons knowledge more fitted to the medical student than to the first-aid pupil. It has the effect of alienating from this most useful work the members of the medical profession, and rightly so, if it tends in any way to trespass beyond the proper limits. In the removal of foreign bodies from the ear it would have been well to lay greater stress upon the danger of unqualified persons syringing the ear. A pea subjected to such treatment is sure to swell and it is in treatment such as this that the first-aid student is likely to do harm by adopting operative procedures which should only be conducted by the medical man. To the same category belongs the treatment of a fractured thigh by means of a long outside Liston splint. In a new edition which should be written up to date we should have expected to see the now most approved method for the first aid treatment of a broken collar-bone. When the broad principle of never placing any bandage over the seat of fracture is wisely insisted upon, the application of the large arm-sling with the corner of the triangular bandage passing under the armpit instead of over the shoulder of the injured side is far superior, keeping as it does the pad in the axilla. Fracture

near to or into the elbow-joint is also omitted with its required treatment by improvised rectangular splint. The chapter on Organisation and Management will be found very useful to secretaries intending to promote ambulance lectures but for the first-aid student himself we would recommend the smaller manuals issued by the London County Council or the St. John Ambulance Association.

Refrigeration in the Dairy. By Loudon M. Douglas, A.M.I. Mech.E. Putney: William Douglas and Sons. 1904. Pp. 80. Price 2*s.*—It is only within comparatively recent years that any serious attention has been paid to the construction of refrigerating machines and yet at the present time we depend largely upon the success of refrigerative processes for a very large proportion of our food-supply. Mention need only be made of the enormous supplies of frozen meat, fruit, and vegetables which annually reach these shores from New Zealand, Tasmania, and elsewhere. The work before us illustrates the importance of an installation of refrigerating apparatus in the dairy and the author has taken the opportunity thus presented to him of describing the refrigerative methods applicable to the dairy as well as to other operations. The *rationale* of the process on which mechanical cooling depends is explained and illustrations of various installations of refrigerating plant are given. There is little doubt that the time is at hand when every small dairy must be provided with refrigerating machinery and such apparatus is now made on quite a small scale. This book therefore will be of the greatest service to those engaged in the routine of the dairy.

Buddhism. An Illustrated Quarterly Review. Vol. I., No. 3. March, 1904. Rangoon: The Hanthwaddy Printing Works. Price 2 rupees—This is the official organ of the International Buddhist Society and contains articles on the ethics of religion, with special reference to the religious books of the East. An article on Hidden Tibet, illustrated with a reproduction of a photograph of the palace of the Dalai Lama, briefly reviews the work of the various explorers who have attempted to reach the "Forbidden City." Of special interest at the present moment is the statement: "In view of wild rumours to the contrary ..... Buddhists ..... view with absolute indifference the affairs of the Dalai Lama and of Tibet generally. ..... The fiction that Buddhists regard the former (the Dalai Lama) in the same light as do Roman Catholics the Pope is too absurd for serious discussion."

JOURNALS AND MAGAZINES.

Birmingham Medical Review.—The April and May numbers may be conveniently noticed together, as each of the articles which appear in the first of them is continued in the second. Sir Oliver Lodge contributes summaries of six lectures to medical practitioners on physics applied to medicine, "ethereal rays of all kinds" being the department of physics selected. The subjects considered at most length are the theories of electrons and ionisation, cathode rays, x rays, brush discharge, high-frequency oscillations, Leyden-jar discharge, ultra-violet rays, and radium emanations (i.e., alpha, beta, and gamma rays). Dr. William H. Wynn writes on Secondary Hypertrophic Osteo-arthropathy, giving "a critical review of the whole subject"; the mere enumeration of recorded cases, together with the bibliographical references, fills 12 pages. Mr. Charles A. Leedham-Green records and discusses a great variety of experimental work on the sterilisation of the hands.

Dublin Journal of Medical Science.—The subjects or titles of the original articles in the June number are as follows:—Milk, Human and Bovine, by Dr. Walter G. Smith; concluding portion of the Clinical Report of the Rotunda Hospital, by Dr. R. D. Purefoy; and Traumatic Rupture of the Spleen followed by Recovery, by Dr. Percy N. Gerrard. In his paper on milk Dr. Smith confines himself to a consideration of its chemical and physical properties and to a discussion of some new and little-known reactions.

Journal of the Irish Medical Association.—In the June number the editorial article is a somewhat caustic criticism of the Irish Local Government Board Report for 1903. The annual report submitted at the general meeting of the association held on June 7th occupies several pages. The remaining contents include summaries of the business transacted at meetings of the council and the various branches.

The Electrical Engineer.—The issue of April 22nd devotes considerable space (about the equivalent of two pages of THE LANCET) to a supposed case in which an x-ray apparatus, in use in a hospital and at present worked by accumulators, may also be worked from the supply main which supplies alternate current at 110 volts and 76 periods. The first recommendation is rectification of the current by means of a Nodon valve with which a mercury interrupter or a step-down transformer would have to be used for the protection of the induction coil. Another method is the employment of an alternating-current motor direct-coupled to a continuous-current generator giving a current of about 10 ampères at 12 volts; this system has the advantage that it may be used for charging accumulators if the apparatus has to be taken from the hospital to a patient elsewhere. A third expedient might be stopping one half of each alternating wave with a Wehnelt brake and a "soupape." A variety of other suggestions are made, including the use of a Batten rectifier, of a Tesla transformer, and of a double-pole vacuum tube.

Mercy and Truth.—The June number contains an article on Work in Kirman, Persia, by Miss Winifred A. Westlake, L.R.C.P., L.R.C.S. Edin., and an account of a tour among the Bedouins in the wilderness of Beersheba, by the Rev. R. Sterling, M.B.

Knowledge and Scientific News.—In the June issue of this journal Mr. W. A. Shenstone, F.R.S., throws out the suggestion that radium may possibly be used to replace the comparatively complicated equipment required for x-ray photography. At present there is some difficulty in using radium in consequence of the radiations from the salt being too diffuse, but the article is illustrated by some very good reproductions of skiagrams taken by means of 50 milligrammes of highly purified radium bromide enclosed in glass tubes.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) "TABLOID" CALOMEL AND OPIUM; AND (2) TABLOID ZINC VALERIANATE WITH IRON AND ARSENIC.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

1. THE combination of calomel and opium is classic and was, and is still, in favour in the treatment of inflammation. The tabloid of calomel and opium contains these drugs in exact doses and in a state of purity which are matters of some importance considering that this combination is frequently prescribed in intestinal disorders. From our examination of the tabloid there is no doubt that it speedily disintegrates after its administration. Each tabloid contains one grain of calomel and a half grain of powdered opium. 2. To the tabloid preparations of the valerianate series Messrs. Burroughs and

Wellcome have recently added a tabloid of the following formula: zinc valerianate, two grains; reduced iron, one grain; arsenious acid, $\frac{1}{60}$th grain; and extract of gentian, one grain. This combination has been favourably used in hysteria and in nervous affections associated with chlorosis.

CHLORYL ANÆSTHETIC (ABSOLUTE ETHYL CHLORIDE).

(DUNCAN, FLOCKHART AND CO., 143, FARRINGDON-ROAD, LONDON, E.C.)

Chloride of ethyl has been used with some success as a general anæsthetic, inducing narcosis when administered in quantities of from two to five cubic centimetres, the anæsthesia lasting for about one minute, which may be maintained for 10 or 15 minutes by the occasional administration of one or two cubic centimetres. The sample submitted to us gave physical constants consistent with the statement that it is absolutely pure ethyl chloride. There was no residue on evaporation nor was any smell developed other than the fragrant chloroform-like smell of the pure chloride. The boiling point is 12·5° C. The anæsthetic is contained in cylinders holding 60 cubic centimetres graduated into one cubic centimetre divisions. The cylinder is provided with a stopcock by which any desired quantity of the anæsthetic can be discharged by gentle pressure with one finger. Ethyl chloride may thus be easily administered and the anæsthesia kept under control. Messrs. Duncan, Flockhart and Co. provide also the simplex inhaler for the administration of the chloryl anæsthetic. Its great merit is its simplicity as is pointed out in an article in THE LANCET of July 18th, 1903, p. 168.

BRANDIES.

(ROUYER, GUILLET, AND CO., COGNAC, AND 59, MARK-LANE, LONDON, E.C.)

We have received five samples of brandy from the above firm representing three qualities "offered as cognac" and "made entirely from Charente wine," while two samples are stated to be young brandies distilled entirely from French wines. We have no doubt that all the samples are genuine brandy—that is, spirit obtained in the pot still from grape wine. The following results on analysis were obtained: One star: alcohol, by weight 46·00 per cent., by volume 53·72 per cent., equal to proof spirit 94·14 per cent.; extractives, 1·16 per cent.; and fixed acids reckoned as tartaric acid, 0·015 per cent. The secondary products were found to be as follows, given in grammes per 100,000 parts of alcohol: acidity reckoned as acetic acid, 44·64; aldehyde, 26·41; furfural, 4·12; ether as ethyl acetate, 132·58; and higher alcohols, 223·20. Total secondary products, 430·95. Regarding ethers as a standard this brandy gives quite satisfactory results of analysis. It may be remarked that the furfural and the higher alcohols are somewhat in excess of the amounts commonly found in good standard Cognac brandy. The brandy is decidedly palatable. Two star: alcohol, by weight 46·68 per cent., by volume 54·43 per cent.; equal to proof spirit, 95·38 per cent.; extractives, 1·11 per cent.; mineral matter, 0·02 per cent.; and fixed acidity reckoned as acetic acid, 0·03 per cent. The secondary products were as follows, given again in grammes per 100,000 parts of absolute alcohol present: acidity reckoned as acetic acid, 10·8; aldehyde, 45·00; furfural, 3·60; ethers as ethyl acetate, 136·22; and higher alcohols, 180·00; total, 365·62. As regards ethers this specimen is also satisfactory. The acidity is somewhat low and the furfural is somewhat high, while the higher alcohols are about normal. We believe this to be a specimen of genuine brandy and its flavour is good. Three star: alcohol, by weight 45·55 per cent., by volume 53·24 per cent.; equal to proof spirit, 93·31 per cent.; extractives, 0·87 per cent.; mineral matter, 0·04 per cent.; and fixed acidity reckoned as tartaric acid, 0·02 per cent. The secondary products were as follows, given in grammes per 100,000 parts of absolute alcohol: acidity reckoned as acetic acid, 50·49; aldehyde, 62·32; furfural, 3·10; ethers as ethyl acetate, 123·86; and higher alcohols, 224·40; total 464·17. There is no evidence in the face of these figures that this is not also a sample of genuine brandy. It possesses a somewhat peculiar and full flavour in which the evidence of having been stored in wood is plainly indicated. Besides the foregoing samples we have received two samples representing brandies shipped in bulk. Their flavour is decidedly inferior, we think, to that of those just described, while on analysis they show a very high proportion of secondary products and in this regard they somewhat resemble marc brandies—i.e., spirit obtained from the marc or residue of grapes after most of the juice has been extracted. Thus the ethers amounted to over 200 parts per 100,000 parts of alcohol present. The higher alcohols were present in almost the same proportion.

NUTRIENT FOOD (SAVORE).

(SAVORY AND MOORE, LIMITED, 143, NEW BOND-STREET, LONDON, W.).

This food has been prepared with due regard to the requirements of those possessing feeble digestive functions. We find that its composition is accurately described. It contains the proteid of milk in soluble form and carbohydrates modified by malting. For use the food is mixed with milk and cooked. On analysis we obtained the following results: moisture, 4·20 per cent.; mineral matter, 1·30 per cent.; fat, 2·00 per cent.; proteid, 26·46 per cent.; total sugar, 18·67 per cent.; and carbohydrates, 47·37 per cent. Except in regard to fat the food contains a satisfactory proportion of the elements of nutrition. The deficiency of fat, however, is compensated by preparing the food with milk.

EVAPORATED CREAM.

(FUSSELL AND CO., 4, MONUMENT-STREET, LONDON, E.C.)]

Our analysis of this preparation was as follows: total solids, 40·00 per cent.; non-fatty solids, 28·78 per cent.; fat, 11·22 per cent.; and mineral matter, 2·21 per cent. This composition shows that the preparation consists of milk of good quality reduced to about one-third by evaporation. It is not correct to call it evaporated cream. According to analysis it is a poor cream but a rich milk. An important feature in regard to the supply of this preparation is that it may be obtained in what are called "family sized" tins which contain sufficient milk for use at one time so that none is left to deteriorate in the tin.

MALTICO PREPARATIONS.

(THE MALTICO FOOD CO., KINGSTON CROSS, PORTSMOUTH.)

We have already reported upon "maltico" which is described as an infant food and which consists chiefly of carbohydrates carefully modified by the diastasic action of active malt. The food is almost entirely soluble in water. It contains, however, only a small proportion of fat and therefore for infants it is desirable that it should be prepared with milk. A recent sample sent to us was found to contain 6 per cent. of fat, a result which is at variance with the statement that the proportion of fat in the new sample which we examined has been increased. On the other hand, "leci-maltico" yields 16·16 per cent. of fat due in part no doubt to the added lecithin. Leci-maltico is in fact an excellent preparation and represents a really valuable food. The value of lecithin in the treatment of anæmic conditions is well known. "Creamalto" is a combination of cream with active malt extract. The proportion of cream is indicated in the amount of fat, which on analysis we found to be 16·78 per cent. The preparation showed a decided digestive activity on starch. It should make a very excellent substitute for cod-liver oil and malt, while its flavour makes it much more pleasant to take.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on June 9th, Mr. JOHN TWEEDY, the President, being in the chair.

It was resolved that diplomas of Fellowship should be issued to 16 candidates, two being postponed because the candidates were under age.

It was resolved that diplomas of the Licence in Dental Surgery should be issued to 46 successful candidates.

In accordance with the recommendation of the Museum Committee it was resolved that rooms Nos. 1 and 4 of the museum should be painted and that the museum should be closed during August and September to permit of the painting being done.

A report was read from the committee on the Relations of the Medical Profession to the Coroner's Court. It was approved and entered on the minutes. The committee had inquired into the matter and had examined the recommendations put forward by the British Medical Association and by the London County Council and had found ample proofs of the desirability of alterations in the present laws, but the questions involved are varied and include matters of administration, such as the rearrangement of coroners' districts, with which the medical profession is not immediately concerned. Having regard to the various interests concerned and to the failure of other institutions to induce the Government to initiate legislation, the committee was of opinion that it would not be expedient for the College to take any action in the matter at the present time.

The PRESIDENT laid before the Council a letter which he had received from the Home Secretary and reported that he proposed to recommend Dr. William Henry Willcox of St. Mary's Hospital as official analyst to the Home Office in the vacancy occasioned by the resignation of Dr. A. P. Luff. The Council approved of the recommendation.

A letter was read from Mr. Henry Morris reporting the proceedings of the General Medical Council at its recent session. The thanks of the Council were given to Mr. Morris for this letter.

It was resolved that the revised regulations for study in chemistry and physics shall apply to those who register as dental students as well as to those registering as medical students on or after June 1st, 1904, and that the new synopsis of the examinations shall take effect in and after March, 1905.

A petition was read, signed by 264 candidates for the diploma in dental surgery, asking the Council to take into consideration the following suggestions:—1. The publication of a reasonably detailed syllabus giving the general range of knowledge required in (*a*) surgery, (*b*) anatomy, and (*c*) physiology, as has been done in the subjects of chemistry and metallurgy. 2. The institution of a quarterly examination as for the M.R.C.S. diploma. Half-yearly examinations enforce an unnecessarily long interval after failure, entail extra expense, and tend to engender a dilatory spirit in the candidates. The petition was referred to the Board of Examiners in Dental Surgery to consider and to report.

A report was read from the committee on Diplomas in Tropical Medicine in favour of instituting an examination and a diploma, and it was decided to invite the Royal College of Physicians of London to appoint representatives to confer with representatives of the College on this subject.

A letter was read from a Fellow of the College submitting a statement in regard to a case of sudden death to which he was called and the action of the coroner for the south-western district of the county of London in reference thereto, and asking the Council to take such steps as shall appear proper to it to defend the College from the inferential aspersion cast upon it by this coroner that a Fellow of the College is not competent to give evidence in his court or to perform a necropsy.

The following examiners were appointed:—

Board of Examiners in Anatomy and Physiology for the Fellowship.—Anatomy: Louis Albert Dunn, Arthur Keith, Christopher Addison, and William McAdam Eccles. Physiology: Edward Waymouth Reid, Ernest Henry Starling, Leonard Erskine Hill, and De Burgh Birch.

Conjoint Examining Board.—First Examination—Elementary Biology: Herbert Willoughby Lyle, Walter G. Ridewood, Thomas George Stevens, and Henry William Marett Tims. Second Examination—Anatomy: Holburt Jacob Waring, Arthur Keith, Christopher Addison, and James Ernest Lane. Physiology: William Henry Thompson, Thomas Grigor Brodie, and John Beresford Leathes. Third Examination—Midwifery: William Duncan, James Henry Targett, George Francis Blacker, and Arthur Hamilton Nicholson Lewers.

Examination in Public Health.—Part I.: Alexander G. R. Foulerton. Part II.: Herbert Timbrell Bulstrode.

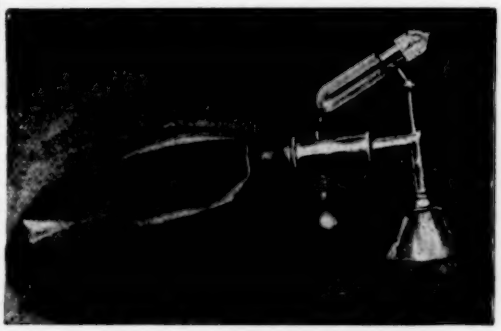
In response to a letter from Sir R Douglas Powell, Bart., the Council granted permission to the Royal Medical and Chirurgical Society to hold a conversazione at the College in May, 1905, in connexion with the celebration of the centenary of the society.

A vote of thanks was given to Mr. Thomas Bryant for his long and zealous services to the College as a member of the Council.

New Inventions.

A NEW CHLORIDE OF ETHYL INHALER.

THE accompanying illustration represents an inhaler for chloride of ethyl of my own design which I have used with marked success for the past 12 months. The following are some of the advantages which may be claimed for it: (1) direct and immediate contact with the chloride of ethyl vapour as there is no medium such as lint which is apt to get frozen and become inert; (2) a continuous discharge of a jet of chloride of ethyl during the short time necessary to produce anæsthesia; (3) the presence of an insoluble residual chamber into which the chloride of ethyl drops and volatilises; (4) the absence of necessity for measurement and special bottles; and (5) facility of manipulation, as the ordinary tube can be opened and slipped on in a second or two. A very short time is required for the induction of



anæsthesia; the average time is 30 seconds and it may be as short as 15 seconds. The average period of available anæsthesia is one and a quarter minutes.

In administration the inhaler is placed firmly and closely over the patient's nose and mouth. (In dental cases a mouth prop or gag is placed in position before commencing.) The air valve is opened and two deep inspirations are allowed to fill the respiratory bag. The air valve is then closed and unconsciousness with full stertorous breathing will rapidly ensue. The inhaler is made by the Dental Manufacturing Company, 6 to 10, Lexington-street, London, W.

J. MAXWELL WOOD, M.B., C.M., L.D.S. Edin.

Dumfries.

DILAPIDATED RUSSIAN HOSPITAL BUILDINGS.—The *Russki Viedomosti* relates that in Juriev the public hospitals, pharmacies, and other analogous institutions are in a most dilapidated condition and in one of the hospitals the other day a large portion of the ceiling fell, simply through age, and killed a patient, wounding a nurse at the same time. It is stated that the fears for the safety of the other houses are based on bad material used in the buildings as well as on their age.

THE LANCET.

LONDON: SATURDAY, JUNE 18, 1904.

The Metric System in Medicine.

THE General Medical Council has passed resolutions which will be likely to create a certain degree of uneasiness amongst older members of the medical profession. The Council was asked by the Decimal Association to express its concurrence with the Weights and Measures (Metric System) Bill at present before Parliament and the matter having been referred to the Pharmacopœia Committee for an opinion it was mentioned in the report of that committee to the Council. The committee was strongly impressed with the importance of bringing the weights and measures of the British Pharmacopœia into accord with the international system which was current in the pharmacopœias of all other countries, and was therefore of opinion that the Council might properly use its influence in favour of the proposed legislation. The wording of the motion adopted by the Council will afford some comfort to those who might be disposed to view this proposal with distrust and uneasiness, since it clearly indicates that the change is only to be made after a sufficient period to be fixed by law. According to the terms of the Bill the substitution of standards of weight and measure according to the metric system for the existing imperial standards will not take effect earlier than the first day of April, 1909, so that there will be ample time for members of the medical profession to become acquainted with the changes which it involves. Should the Bill now before Parliament become law the Council expresses readiness to take all necessary steps to give effect to the law by making the proper modifications in the British Pharmacopœia. It will be remembered that when the Pharmacopœia was last revised in 1898 such a change was foreshadowed by the introduction of metric equivalents for the imperial weights and measures; this, at least, left to pharmaceutical chemists and manufacturers liberty of action and in no way interfered with the freedom of the prescriber. For doses the imperial system alone was used, hence in all probability most medical men ignored the columns of the metric system. The metric system, however, has numerous supporters and there is no doubt that it has much in its favour. Amongst modern physiologists and analytical chemists it is invariably employed, and its convenience for rapid calculations cannot be over-estimated; there is enormous advantage in adopting a system which is common to all nations, since the troublesome need of conversion is thus saved and this further diminishes risks of error. The one strong argument against the innovation is the convenience of the prescriber, and it is not the future or even the present student of medicine, but the practitioner who fears the change, feeling as if he were suddenly called upon to learn a new language. That this is no fanciful grievance has been suggested by experience in the United States where it has been urged that the unpopularity of the Pharmacopœia and its relative disuse may be attributed to the introduction of the metric system. Medical men are so much accustomed to regard the United States as the forerunner in modern improvements in pharmacy that it is interesting to learn that in this matter the departure has not proved a success.

There must be wholesale lightening of the ship by throwing overboard superfluous and antiquated cargo; the old comforting phrases about "putting everything right with a few grains of calomel or a grain or so of aloes" will have to be exchanged for a newer version. Revised versions are never satisfactory to those accustomed to an earlier form, even texts do not seem quite so soothing when amended by the latest scholarly efforts. We feel a sense of loss, although assured that greater accuracy implies gain. Patients then as well as the older generation of practitioners may be expected to resent any tampering with the standard and may feel as though landmarks were being shifted. Younger practitioners may also resent the change but will, it is to be hoped, not experience the same degree of difficulty in adopting the new and discarding the old. Those to whom the change will be most welcome are those still in the embryonic stage, who have not yet been troubled to commit doses to memory and thus have little or nothing to unlearn. The pity is that they will accept their inheritance of greater ease without one thought of gratitude, since they can never realise how much they have been spared. Every change of routine involves trouble and risk. In this suggested change the risk is more than merely the convenience of the prescriber. It is a trite saying that "coming events cast their shadows before them" and already, before the metric system has been officially recognised, we hear of trouble through the confusion of the two systems. Not very long ago we published an interesting case[1] in which most serious symptoms resulted from an overdose of hyoscine hydrobromate through the familiar mistake of dispensing grammes for grains; a dispenser sent a written message to a branch establishment for 0·08 gr. of hyoscine hydrobromate and the dispenser at the second shop, seeing decimals were used, took it for granted that it was a foreign prescription and that "gr." stood for gramme. In reporting this case it was remarked that surely the time had come for the rational and scientific metric system to be enforced as the official standard.

In the preface to the present Pharmacopœia it is recognised that during the period of transition from the imperial to the metric system a certain amount of confusion is likely to occur. We have become so much accustomed to think in terms of the imperial system that we feel as though we had, like the poet, "lisp'd in numbers, for the numbers came." Dread is experienced lest the attempt to make the change, with its appalling appearance of weird decimals, should involve personal risks to the patients and professional risks to the prescriber. All who have travelled on the continent know that these fears are more imaginary than real. The metric system is easy to acquire and it greatly facilitates rapidity of calculation. The Pharmacopœia Committee appears to consider that after

[1] THE LANCET, Jan. 2nd, 1904, p. 24.

the metric system has become the one legal system employed in this country it would probably still be necessary to insert, in reference to dosage at least, equivalents expressed in the old imperial terms. This may be desirable as a matter of convenience but it is to be hoped that it will not foster the continued employment of the older system. There is risk of confusion when the two systems are employed side by side and for this reason we think that if any change be made it should be a complete change; that the metric system, if legalised, should completely supersede the imperial system and that prescriptions should no longer be made up when the older system has been employed. This may seem rather a harsh recommendation ut it is necessitated by a desire for the public safety.

A Pathological Frontier.

WE have heard a good deal from time to time in connexion with the defence of our Indian possessions about a "scientific frontier" and a "natural frontier" but it has remained for the present expedition to Tibet to have added what may be not inappropriately termed a "pathological frontier" to the list. Our special correspondent in his "Notes from India" which we published at p. 1613 of our issue of June 4th gave us such a picture of the nature of the climate and country traversed and of the difficulties, hardships, and sufferings of the Tibet mission on its march as may well keep Russia from caring to encounter them by advancing *viâ* Tibet into India, if she ever cherished such a design. Our correspondent says that the ordinary accounts of the advance of the Tibet mission only briefly refer to some of the hardships of this wintry march. But it is not generally recognised that the marching and camping are being done at altitudes unknown and impossible in Europe and that while the suffering from the cold is severe that from the rarity of the air is intense. To quote from our correspondent's communication, "The lungs seem unable to do their work. One gasps and pants after the slightest exertion as if about to suffocate. Whilst still this rarefied air can be tolerated but under exertion air-hunger becomes distressing. The transport animals feel it and the business of bringing them along is painful. The mission camped at Dantu opposite a frozen waterfall 200 feet high. As the march was above the wood line fuel was doled out very sparingly—in fact, only sufficient to cook the daily ration. None could be spared to light fires for the sake of warmth. Further on Pharo plain an altitude of 14,000 feet was attained. During this part of the march it is stated that at every few yards men sat down, bent double, grasping their heads in their hands." Still further on came the Tung pass which is higher than Mont Blanc and the air-hunger became still more extreme. Many followers in advancing lay down and would have died in the cold but the column moved them on to another camping ground, but without fuel and with 23° of frost.

The difficulties of this particular march in many ways may be said to have been unparalleled but a reference to the published accounts of other exploratory missions undertaken on behalf of the Government of India furnishes us with somewhat similar experiences. In "The Roof of the World," published in 1876, Colonel T. E. GORDON, now General Sir T. E. GORDON, K.C.B., has given a full description of his journey and experiences on the Kashghar Embassy of 1873-74 under the late Sir DOUGLAS FORSYTH, K.C.S.I. The mission was a very remarkable one in many respects, especially as regards the exceptional altitude of some of the mountain passes traversed—18,550 feet in some instances. Mountain sickness was very prevalent but it appeared to be like sea-sickness in that it seems possible to get used to it, as it became less and less at each succeeding elevation. Headache, breathlessness, and difficult respiration are also mentioned. The mission had a native butler who was as sensitive in these respects as a mountain barometer at all altitudes at and above 1200 feet. On the return journey Dr. F. STOLICZKA, Ph.D., of the Indian Geological Survey, a member of the mission, died at the Dipsang plateau, where the climatic conditions proved distressing and the elevation was 17,500 feet; otherwise the mission was healthy. It may be mentioned that while the temperature was 15°F. below zero in tents at Aktagh the thermometer marked 100° in tents at Rawal Pindi when the mission reached there towards the end of July.

The late Surgeon-Major BELLEW, C.S.I., of the Bengal Staff Corps, in his "Kashmir and Kashghar, a Narrative of the Journey of the Embassy to Kashghar in 1873-74," published in 1875, deals more fully, as might be expected, with the medical aspects and occurrences of the journey. He dwells upon the effects of elevation in causing distressing headache, giddiness, nausea, and sickness, as well as difficulty of breathing, especially on exertion, all of which he attributes to an imperfectly oxygenated blood from rarefaction of the air—"the evils of a half ration of our wonted supply of oxygen." He mentions that he found the administration of chlorate of potassium as a means of introducing oxygen into the blood of great value in mitigating these distressing symptoms—a suggestion which he obtained and acted upon from Dr. G. HENDERSON'S experience on his journey in the same regions in 1870. At 18,300 feet men and cattle were severely affected by the elevation and cold, animals labouring and moving slowly with light loads and some of them being affected with great muscular tremor and tumultuous action of the heart. All these experiences of the difficulty of traversing long distances at high altitude justify us in regarding the enormously elevated ridges and plateaux of Tibet as a "pathological frontier."

On the Immunity from Plague enjoyed by Shanghai.

WE have had our attention drawn to the immunity enjoyed by Shanghai from plague whilst so many of the other coast ports of China suffer severely. Various explanations have been offered for this fortunate state of affairs, and, were we convinced of their potency, we would suggest that strict inquiry should be made into the matter with a view of ascertaining how Shanghai has remained unaffected, and what practical lessons are to be learned from the circumstance. The immunity is ascribed to (1) the strict inspection of ships calling at the port from infected centres; (2) the excellence of the main drainage of Shanghai; (3) the fact that the Chinese houses are two-storeyed buildings only and that

each house has a small yard at the back paved with cement or concrete; (4) the absence of sanitary fittings inside the houses, so that it is impossible for the Chinese to interfere with the working of the drains; (5) an ample supply of water; (6) the removal of the whole of the night soil and kitchen refuse by the bucket system; and (7) the flushing of the drains by tidal water and the consequent destruction of rats. According to this showing Shanghai would appear to be a hygienic paradise and immunity from epidemics of all sorts practically to be guaranteed.

Those who know Shanghai will be astonished to hear the sanitary arrangements of the city so highly spoken of. It is a fact that typhoid fever is present in Shanghai to a degree unparalleled in any other of the coast ports of China—at any rate, so far as Europeans are concerned. Dysentery is a disease of common occurrence, diphtheria claims its victims, and cholera is not unknown during the autumn. The water-supply of the city is, moreover, not above suspicion. Water there is, no doubt, in plenty but the quality of the water was recently the subject of serious alarm. The claims made for the bucket system being efficacious in the prevention of plague cannot be seriously considered, for the bucket system is in force in all treaty ports in China. It would appear, therefore, that there must be other causes at work to account for the immunity enjoyed by Shanghai but we are not prepared to say what these are. In many other parts of the world we find isolated towns and districts with a similar and a still more extraordinary immunity. No better example can be quoted than that of the city of Madras. Plague has not visited Madras city although in the Madras Presidency right up to the very outskirts of the city itself plague has prevailed in epidemic form for several years. Anyone who has visited Madras is ready to believe that all the elements, as we at present understand them, calculated to harbour plague exist there, and yet, although some cases of the disease have actually been imported into the town and died there, the disease has not spread. Why this should be is not understood. Calcutta, again, has not suffered so severely as Bombay, although the conditions would appear to be even more favourable for the spread of plague in the former than in the latter city. There are other etiological factors at work that are not readily ascertainable and the immunity of Shanghai is not to be understood by any sanitary consideration which we know of. In Hong-Kong we have the example of a city visited again and again by plague, a city in which the quality of the water supplied for consumption is amongst the purest in the world. The bucket system is in force there, the sewerage is excellent, and yet Hong-Kong suffers to as great an extent as Canton where all the sanitary conditions are bad.

The fact is that plague exists nowhere along the valley of the Yang-tse-Kiang and although Shanghai stands at the mouth of the river and is liable to infection from the seaboard we know that, in China at any rate, the infection has come for the most part overland. Canton was infected from Yunnan and from Canton plague reached Hong-Kong. The disease travelled along the Chinese littoral to Swatow and further north. The infection of Niu-Chwang and parts of Manchuria was possibly from up country, for CLEMOW has shown that a distinct centre of plague exists to the north of the Great Wall. These and other considerations render the immunity enjoyed by Shanghai difficult to be accounted for in any sanitary conclusions. We are daily getting additional proofs that the presence of plague in epidemic form is dependent upon the infection of the domestic animals of the district. Cases of plague occurring amongst men arriving from infected areas are little likely to lead to a local outbreak of the disease. It seems to be a fact that if the animals do not suffer from plague the disease will not spread amongst men. By animals it is not only rats that are meant for almost all domestic animals are known to acquire plague and it may be safely said that if these animals do not develop plague the disease in man will not continue in any particular district. We rejoice to know that Shanghai has escaped plague so far; we are willing to admit that careful precautions have been taken by the municipal authorities; we admire the sanitary improvements which have been accomplished by the untiring efforts of the medical officer of health, the sanitary engineers, and by those responsible for the health of the great city, of which the foreign community has every reason to be proud; but we are sure that they will pardon us if we refuse to recognise as a scientifically proved fact that these measures have succeeded in protecting Shanghai from an epidemic of plague, seeing that other cities and districts with far fewer hygienic advantages have also shown an extraordinary immunity to the same disease.

Annotations.

"Ne quid nimis."

PUBLIC COMPETITION IN THE SERVICE OF HUMANITY.

ANY plan which is calculated to develop inventive capacity and to direct it towards the attainment of humane ends is worthy of the highest encouragement. The great masses of people must include not a few individuals possessing originality of purpose, thought, and practical application to a special degree which lie dormant for the want of a stimulus or for lack of opportunity of developing these attributes. There is no doubt that if many of the difficult problems which frequently confront us could be forced upon the serious attention of the public at large there probably would be found some individuals to whom a satisfactory way out would readily suggest itself. Amongst the methods of drawing upon the talent that may otherwise lie hidden in a community is that of offering prizes of a substantial and honour-giving character. The method is commendable so long as the reward is ample to the originator of the design and consistent with what may prove to be its practical value to humanity. There are several instances on record in which by opening a public competition and offering substantial money prizes valuable results in the interests of humanity have been gained. We need refer only to two—viz., the King's Prize Essay for the best design of a sanatorium for the treatment of consumption and the Nobel prize for the best essay on the steps to be taken calculated best to secure the peace of the world. The latest example of inventive capacity being invited and encouraged to work in the interests of humanity was the offer of the Transvaal Chamber of Mines at Johannesburg in 1902 of three prizes—the first of £500, with a gold medal; the second of £250; and the third of £100—for the three

best practical suggestions and devices for obviating or minimising the occurrence of miners' phthisis. The awards have been made recently and no fewer than 229 competitors entered into the practical consideration of a remedy for this fearful scourge and great good has come out of the scheme. Even assuming that an entirely satisfactory method does not prove to be the outcome of a competition organised on the lines indicated, yet the efforts made towards securing a desirable end are not likely to be made in vain but rather to add very substantially to our knowledge of the difficulties presented and of means by which they may ultimately be overcome. In the competition at Johannesburg the judges expressed the opinion that the best means of suppressing the evil of miners' phthisis would be the adoption of a perfect water drill combined with the use of an atomiser. The first prize was awarded to Mr. Thomas J. Britten for an atomiser which was found to lay 75 per cent. of the dust and the second prize was awarded for a water drill which, however, still left something to be desired but it is confidently hoped that the partial success of the drill will lead inventors to improve further upon it until absolute success is attained.

THE MINOR NEUROSES AND PSYCHOSES AS SEEN IN THE DISPENSARY PRACTICE OF A GREAT CITY.

IT is seldom possible to obtain accurate data and trustworthy figures with regard to the distribution of the minor psychoses and neuroses in any community, though the inquiry might be well undertaken by philanthropic bodies such as the charity organisation societies of great cities. In the *Journal of Nervous and Mental Disease* for May Dr. Smith Ely Jelliffe of New York gives an interesting account of the cases of minor neuroses and psychoses at the Vanderbilt Clinic of New York since its opening in 1888, and adds full details of the special kinds and classes of patients treated during the past year. The conclusions drawn, based as they are on the material of a vast and representative practice of the dispensary class, are of both medical and social interest. During the early years of the period—viz., from 1888 to 1892—the cases of all diseases treated in the clinic averaged from 30,000 to 35,000 a year, the proportion of nervous diseases among these being between 4 and 5 per cent. This proportion has been maintained throughout the period under review. During the past five years the cases of all diseases treated in the clinic averaged from 46,000 to 48,000 per annum, the proportion of nervous diseases remaining practically as before—viz., between 4·2 and 4·8 per cent. "So far as the Vanderbilt Clinic is concerned," says Dr. Jelliffe, "the ratio of sickness referable to the nervous system varies from 4 to 5 per cent. of the entire sick clinic population." Dividing the illnesses into those with mental symptoms (psychoses) and those unattended with important mental disturbance (neuroses) it is found that in the years 1902 and 1903 for one case of psychosis there were nine cases of neuroses. The total number of cases of both psychoses and neuroses for the year 1903 was 1860. The "psychoses" comprised all conditions varying from idiocy and the degenerative forms of insanity to melancholia, insanity of the menopause, and general paralysis. The various grades of idiocy and mental deficiency were represented by a total of 75 patients out of 1860. This proportion (4 per cent.) "is 1 per cent. higher than the incidence noted in 1902, and emphasises with even greater force," adds Dr. Jelliffe, "that the city [of New York] is greatly in need of supplementary training schools for defective children." The experience of the Vanderbilt Clinic shows that there is a large number of such defectives. The other psychoses were in very widely varying proportions. Cases of simple mania and of "obsessions" were very rare (three cases in all). Then in ascending order of frequency followed morphinomania (three cases), hypochondriasis (five cases), paranoial forms of insanity (seven cases), and melancholia with depression (17 cases). The cases of melancholia were sufficiently severe to warrant the diagnosis. The psychoses which follow were in higher proportion—viz., 28 cases of climacteric psychoses or mental disturbances in women occurring at the menopause and sufficiently grave to cause anxiety to themselves or their friends, 26 cases of general paralysis of the insane, all in males, and 40 cases of chronic alcoholism of which 39 were males. Probably, says Dr. Jelliffe, these alcoholic cases represent but a small portion of those addicted to excessive drinking. On the borderland between the psychoses proper, as mentioned before, and the neuroses a number of cases variously called neurasthenia and phrenasthenia were treated at the clinic. Whether the "neurastheniacs" that present themselves at the clinic for diseases of the nervous system are in reality cases of psychasthenia or neurasthenia it was difficult to decide, Dr. Jelliffe's opinion being that most of the cases were "individuals of weak mental capacity and, properly speaking, psychasthenias rather than neurasthenias of the strictly nerve-fatigue type. Neurasthenias of defective [cerebral] evolution perhaps they may be but neurasthenias of overwork they rarely are." They comprised 384 patients, of whom 211 were men and 152 were women. No etiological factors are mentioned for nearly the whole number, except that syphilis is put down as an exciting cause in six, trauma in two, and sexual excesses in 45. It appeared that most of them were of congenitally abnormal nervous constitution. The group of "neuroses" proper which follow comprised varying forms of neuralgia and neuritis, of peripheral palsies, tabes dorsalis, and other diseases of the nervous system. Cases of neuralgia were common, there being 114 cases, including 49 males and 65 females. The neuralgic attacks were nearly always local, affecting the following regions—viz., facial (40 cases), occipital (five cases), sciatic (36 cases), supraorbital (nine cases), dental (16 cases), brachial (nine cases), arthritic (ten cases), and lumbar region (four cases), while a few are not specified. Neuritis affected 61 patients—viz., 35 males and 26 females. All were mild cases unassociated with peripheral palsy or wasting of muscles. They comprised three cases of occipital neuritis, four due to lead poisoning, eight of multiple (peripheral) distribution and of obscure causation, and ten of alcoholic neuritis. The peripheral palsies and organic diseases of the nervous system included the following classes of cases. Three were cases of "progressive muscular atrophy" of the lower (or lumbar cord) type, there were four cases of tumour of the spinal cord, six of lateral sclerosis (all males), 16 of disseminated sclerosis, 20 of Erb's paralysis, 21 of acute anterior poliomyelitis (of children), 31 of traumatic palsy of various nerves (21 being of the musculo-spiral nerve), 31 were cases of facial paralysis, and 35 of tabes dorsalis.

THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE AND TRYPANOSOMIASIS.

IN a letter published in the *Times* on June 14th an appeal is made for funds to continue the important researches on trypanosomiasis which are now being conducted by the Liverpool School of Tropical Medicine. In the appeal, which is signed by Sir Alfred L. Jones as chairman, by the Duke of Northumberland as vice-chairman, and by Professor Ronald Ross, the cost of the investigation is shown to be very heavy. The school has already disbursed the sum of £3000 and will require to expend at least £2000 a year if the work on this subject is to be continued. The importance of the investigation of the relation of the trypanosomes to sleeping sickness in man, which now claims so many victims, and to tsetse-fly disease and surra in animals is very

obvious, and the statement in the letter that this investigation is of imperial interest and that it will tend to benefit all our great tropical possessions is one which we can endorse while commending the appeal to public support.

WHAT IS BRANDY?

THE recent magisterial decision on this question—a decision which has our entire concurrence—is evidently having a wholesome effect upon the retail spirit trade. We learn that notices in very big type are being displayed in the bars of certain public-houses in the north of London announcing that "all spirit sold at this establishment as brandy is of the same superior quality as heretofore, but the percentage of pure grape spirit is not guaranteed." The value of analysis was discredited by the trade previously to the Islington prosecution case. It is an interesting sequel to the case that they now find that they must protect themselves against the further operations of analysis by disclosing to the purchaser the nature of the so-called brandy in such unmistakeable terms as are contained in the above notice.

"PUBLIC HEALTH" AT SPENNYMOOR.

THE urban district of Spennymoor in the county of Durham has achieved unenviable notoriety for its insanitary conditions and for the incompetence of its local governing bodies. Two years ago strong representations were made to the Registrar-General by the county council of Durham with the object of remedying the scandal of death registration in this district. During the seven years 1896 to 1902 uncertified deaths had formed, on an average, no less than 24 per cent. of the total deaths. Nearly all these deaths were uncertified as a result of unqualified medical practice and the action of the coroner and of the local registrars made it comparatively easy for such deaths to be registered without inquiry. It does not appear that this objectionable state of things has yet been remedied and meanwhile it has been shown that a large proportion of the uncertified deaths occur at early ages and that the death-rate from certain diseases of children would be materially increased if the facts about the cause of death had been in all cases properly ascertained. This is especially important, as even with the present faulty certification it is found that the mortality in Spennymoor from infantile diarrhœa and other diseases of children is exceptionally high. The general death-rate of the locality, and also the mortality from enteric fever, are also very unsatisfactory. A report by Dr. R. J. Reece, issued by the Local Government Board last year, showed that the district council of Spennymoor has been largely to blame for the unhealthiness of the place. Dr. Reece reported that all kinds of nuisances were allowed to arise through the want of paving, draining, and channelling of back yards and common yards and that soil pollution also occurred in consequence of the large open privy middens near the dwellings and the inefficient system of scavenging adopted. Sewers, where laid, had been constructed practically without plan and were imperfectly ventilated and defective in construction; the sewage was allowed to pollute the river Wear without treatment, even at outfalls where works of sewage disposal had been provided; by-laws were antiquated; and cowsheds, slaughter-houses, and especially common lodging-houses received no efficient supervision and in most cases were in an extremely insanitary state. The district council, though well advised by its medical officer of health, had neglected to attend to these and to many other defects, and Dr. Reece showed that where money has been spent in sanitary works it has not always been employed to the best advantage. It might have been expected that after this outspoken report the district council would have made an effort to obtain a better reputation for competency in the future but reports of its recent proceedings are far from encouraging. The most pressing need of the place is that there should be an active sanitary inspector with good knowledge of his duties. Yet when the office lately became vacant the district council passed over 122 candidates, of whom 82 held certificates of the Sanitary Institute or some similar body, and selected a coal-miner, lately a member of the council, who was without practical experience of sanitary work and possessed no certificate of competency. The Local Government Board has very properly refused sanction to the appointment. At its last meeting the district council declined to make a fresh appointment and resolved that the influence of two local Members of Parliament should be invoked in support of the coal-miner. The Members concerned will be wise to read Dr. Reece's report forthwith and to understand the unhealthy and dangerous conditions of life which this local "sanitary" authority is virtually asking them to encourage. It is to be hoped that the Local Government Board will continue to take a strong line with this obstructive district council and will bring it to a better understanding of its duties and responsibilities.

THE INFANT ORPHAN ASYLUM AT WANSTEAD.

IN THE LANCET of June 4th, p. 1610, we published a letter from Dr. W. P. Herringham and Mr. A. A. Bowlby concerning the decision of the committee of the Infant Orphan Asylum, Wanstead, not to provide an isolation block and also to abolish trained nurses. We have now before us the annual report of the medical officer of health of the Wanstead urban district council for the year 1903. In this report occurs the following passage concerning the Infant Orphan Asylum: "I am of opinion that the present infirmary accommodation is quite inadequate for the requirements of such an institution containing as it does nearly 600 inmates. My main point is this, that even apart from the ordinary beds where cases of ringworm can be treated, there is no separate block where infectious diseases can be isolated. The disinfector, which is now relied upon, is useless for the purpose." We can only repeat our contention that the friends of the institution will regret that the committee has adopted a course so incompatible with the expressed opinions of the medical staff and not only of the medical staff but of the medical officer of health of the district. Ringworm, it is well known, is a very infectious disease and the facts that the children are infants, are orphans, and are poor supply no reasons why they should be exposed to the risks of infection to which they must necessarily be exposed if proper accommodation for isolation and proper nursing are not provided.

THE VITAL STATISTICS OF BUENOS AYRES.

WHATEVER may be said for the cult of the beautiful in art, the achievements of architecture and engineering, the application of chemistry and electricity to the material prosperity and luxury of a community, or to the perfecting of the engines of destruction in modern war as indications and measures of progress in civilisation, it will scarcely be disputed that the successful working out of the principles of public health in a large and rapidly growing population is at least as good an indication as any of the former. Tried by this some of the most prosperous and "up-to-date" of our colonial cities would have to take a low place, while one, and we think one only, of those of South America would be found in the very front. Anyone interested in vital statistics will find the "Annuaire Statistique de la Ville de Buenos Ayres" most satisfactory reading, showing results highly creditable to the activities of the municipal authorities during the last 20 years. We have here a city with a most heterogeneous population rapidly

growing both by immigration and by natural increase, with an extremely high birth-rate, especially among the predominant races of Italians, Spaniards, and "native" Argentines so-called, coupled with a very low general, and still lower infant and child, mortality. In 20 years the population has more than doubled itself and last year had reached a total of 895,000. The general death-rate which in the "eighties" had been as high as 27, has steadily fallen during the last decade from 19·0 to 15·6 per 1000. The birth-rate, after having averaged 40 for a number of years, has sunk to 35·3, but the infant mortality has gone down from 140 to no more than 80 per 1000 live births, while the child population, or number under five years of age, was 137,000, equal to 155 per 1000 of all ages, the proportion in England and Wales being 136. The death-rates from the two diseases or groups of diseases most fatal to infant life had fallen—that from diarrhœa, &c., from 56 to 19, and that from bronchitis, pneumonia, &c., from 38·57 to 15·94 per 1000 living under two years of age. Every disease in any way preventable by hygienic measures is steadily declining, though some are still higher than they might be, as tuberculosis (22·0) and typhoid fever (2·20), the figures for London being 17·3 and 1·44 per 10,000 inhabitants respectively, that from diphtheria, on the other hand, being 2·39, against 3·46 for London. Every people of Europe and America with some from Asia and Africa is represented among the immigrants and on an average half of these new-comers marry into other nationalities than their own, giving rise to a singularly mixed race. But the Italians and Spaniards come in overwhelming numbers—e.g., last year 42,358 Italians and 21,917 Spaniards, equal to 64,275 out of a total of 75,227 immigrants, so that the Argentine proper may be looked on as essentially a blend of these two and the fertility of the two pure and mixed races is remarkable, families of from 15 to 20 being of not infrequent occurrence. Montevideo, on the opposite shore of the mouth of the Rio de la Plata, holds a position among South American towns second to Buenos Ayres only, but Santiago de Chili in the same latitude and enjoying one of the most perfect climates in the world is at the same time one of the unhealthiest cities in every way.

THE TAMWORTH TOWN COUNCIL AND THE REPORT OF ITS MEDICAL OFFICER OF HEALTH.

ACCORDING to the *Tamworth Mercury* of June 11th the mayor of that borough has recently had reason to deplore "a repetition of those extremely unpleasant scenes in the past which made that council improperly, if he might say so, but at any rate undesirably, famous throughout the country." The occasion for the outbursts referred to appears to have been "the action of the medical officer of health in sending his annual report to the Local Government Board and the county council without first intimating to this council his intention to do so," an omission which, in the opinion of the sanitary and streets Committee, was "discourteous to the committee." We have not yet received a copy of the report in question and so far as we can judge, seeing that the committee is apparently disinclined to print it, we are not likely to do so. But as the merits of the report do not really arise this point is immaterial and, moreover, the account in the *Tamworth Mercury* throws some interesting sidelights upon the unwillingness of the committee to have the report printed. It is curious that a local administering body which has risen to the dignity of a town council should not have been accurately informed as to what is the precise position of the medical officer of health with respect to his annual report and what are his instructions relative thereto. Doubtless the town council could have ascertained all the facts from its town clerk, but it would seem that the mayor, who "will always try to prevent the town from being governed by officials as it had been," was too proud to seek advice from the proper quarter. In these circumstances it may be well that we should draw attention to Article 16 of the Order of the Local Government Board which was issued on March 23rd, 1891. This Order provides that when giving information to the Local Government Board of the outbreak of infectious disease or transmitting to it a copy of his annual report or of any special report he must give the like information or transmit a copy of such report to the county council or county councils of the county or counties within which his district may be situated. Obviously, therefore, Dr. H. J. Fausset, the medical officer of health, had no alternative but to submit at once a copy of his report to the Local Government Board. Had that Board wished for the reports of medical officers of health as "revised" by the local authorities it would doubtless have asked for this in its Order and in that case it would never have learnt that "the work of inspection of the borough with regard to the removal of nuisances required more attention." Possibly this may be one of the paragraphs which it was the object of a defeated amendment to omit but whether or not this is the case the country will now know that things are not as they should be at Tamworth. We gather, too, from Mr. Dewes, one of the councillors who supported the medical officer of health, that there is much truth in the report and that it should not be tampered with because such reports "ought to be ungarbled and unaltered but express straightforwardly" the views of the medical officer of health on the sanitary condition of the borough. As Mr. Dewes pertinently observed, the council could not absolve the medical officer of health "from his duty to send his report to the Local Government Board." The medical officer of health is, Mr. Dewes added, the "eye" of the Local Government Board, which body looked to him for an independent report. Alderman Hare agreed with Mr. Dewes and in his view the action of the committee suggested the idea that there was something in the report which was incorrect. He considered it "an excellent report with nothing at all wrong about it." Having now obtained the report both the Local Government Board and the county council may be anxious for the observations of the Tamworth town council upon some of its passages. Possibly it may select those two passages which were the subject of the amendment. The town council has clearly made a mistake and it would do well at its next meeting to acknowledge frankly the fact to Dr. Fausset.

POISONING BY ILLUMINATING GAS.

ATTENTION to the important matter of poisoning by illuminating gas, of which 290 fatal cases occurred in New York city alone in 1901, is drawn by Dr. W. G. Thompson in a paper read at the recent annual meeting of the Association of American Physicians held at Washington in May and published in *American Medicine* of May 28th. Dr. Thompson's investigations were undertaken to determine the cause of death and of certain symptoms that are characteristic of poisoning by illuminating gas. A brief account of some of these symptoms was published, with illustrative cases, in THE LANCET of Oct. 11th, 1902. The series of cases studied by Dr. Thompson include 90, of which 17 were fatal. It is estimated that in New York probably 2000 cases of poisoning by gas occur annually. This is due to the prevalent use of the gas stove and to the ignorance of the foreign population going into the city. The deleterious effect of the gas on the blood, when inhaled, is due to one of its constituents, carbon monoxide, which firmly combines with the hæmoglobin of the red corpuscles and thus deprives the blood of its normal oxygen-absorbing power. But, adds Dr. Thompson, the action of the carbon monoxide upon the nervous system

is more important than the changes produced in the blood. A leucocytosis which lasts for many days is one of the changes produced, while a febrile reaction is also developed in the system. The character of the fever is varied: a subnormal temperature may exist for some hours and then be followed by a fever which persists and remains high for a week or more. One case of pyrexia was observed in which the temperature reached 110° F. The associated nervous symptoms are varied in character. They consist of headache and mental confusion or delirium passing into coma in severe cases, muscular tremors and twitchings, anæsthesia of the skin, and rigidity of the muscles combined with opisthotonos. Among the later sequelæ there occur sclerosis and destructive changes in the brain and bulbo-spinal cord or in the peripheral nerves. The most satisfactory form of treatment was found to be venesection to the extent of about two pints of blood with simultaneous infusion of an equal quantity of warm and sterile physiological saline solution. In the discussion which followed the communication of Dr. Thompson's paper at the meeting referred to Professor Stengel of Philadelphia drew attention to recent experimental work which had shown that the transfusion of defibrinated blood had saved animals (rabbits, dogs) poisoned by coal gas even when venesection and infusion with salt solution failed. Professor S. Weir Mitchell and Professor Solis Cohen directed attention to the varying composition of illuminating gas in different cities; it was more highly charged with carbon monoxide, acetylene, and other highly toxic constituents at certain times than at others. Much leakage of gas took place into the cellars and basements in streets where the main gas-supply pipes had been badly laid and the slow and chronic poisoning of persons exposed to the influence of leaking gases was established by investigation in various large cities. Dr. Peabody said that defibrinated blood was difficult to procure as it had to be fresh and he supported the conclusions of Dr. Thompson that prompt treatment of all severe cases with venesection and saline transfusion had saved the lives of many persons poisoned by gas.

THE PROVISION OF OUTDOOR MEDICAL RELIEF.

IN attempting to improve the conditions under which the wants of the sick poor of their district are ministered to the Lambeth guardians have taken a step which may have far-reaching consequences, especially as regards the status of Poor-law medical officers. At a recent meeting of the board a special committee which had been appointed to consider the question of outdoor medical relief reported favourably upon a scheme which has been for some time under discussion and which proposes to substitute for the present district medical officers a staff of medical men who should devote their whole time to relief work and be under the direct control of the chief medical officer of the workhouse infirmary. In the opinion of the committee this plan promises so well that it advises its adoption in certain of the districts of the parish and it proposes that four medical officers at salaries ranging from £100 to £250 per annum should be appointed in order to give to the suggested arrangement a fair trial. There is, of course, no imputation that the existing district medical officers fail to carry out their duties as efficiently as possible and we assume that when the new arrangement comes into effect the interests of these gentlemen will be adequately safeguarded. Provided that this is done the proposed change is one likely to be to the advantage of both the sick poor and their medical attendants. The former will cease to run any risk of having their claims upon the time of a district medical officer subordinated to those of private patients, while the latter will have an opportunity of setting on foot a scheme of organisation which may do something to lift the Poor-law service from its present unsatisfactory position. There seems, indeed, to lie in the Lambeth proposal the germ of great possibilities. We may eventually get in this particular branch of our national undertakings a Poor-law Medical Corps in relation with the Local Government Board and comparable with the Royal Army Medical Corps. Such a development could hardly fail to increase greatly the prestige and the efficiency of the medical men engaged in Poor-law work. Until the experiment has been tried it is difficult to form an even approximately accurate estimate of its cost but at the salaries which the Lambeth board offers there does not seem likely to be any serious addition to the present expenditure. There is, moreover, a further prospective advantage in that the nursing of the sick poor could be intrusted to women trained under the medical superintendent of the infirmary and recognising in him and the medical officers under him a legitimate authority whose instructions they would readily obey.

EMPYEMA OF THE FRONTAL SINUS FOLLOWED BY CEREBRAL ABSCESS.

ABSCESS of the brain is a rare result of empyema of the frontal sinus. In the *American Journal of the Medical Sciences* for April Dr. Paul S. Mertins has reported the following case. A man, aged about 40 years, sought medical advice on Sept. 8th, 1903. For six months he had suffered from violent headaches of increasing severity. Within the last three days a swelling of the size of a goose's egg appeared in the region of the glabella. It was fluctuating and very tender. A hard rim, apparently thickened periosteum, was felt around its margin. 16 years before he contracted syphilis and two years before he received a blow with a hammer on the top of the head and was unconscious for several days. The swelling was incised and about an ounce of dark-coloured pus was evacuated, with complete relief of the pain. On the third day the pain returned and the patient noticed that when he held his head forward the flow of pus increased and the pain diminished. On the night of Sept. 13th the pain became more severe and the patient vomited several times and had three convulsions. On the following morning he was seen in consultation by Dr. Mertins. Cerebration was slow but no paralysis could be found. The anterior end of the middle turbinate bone was swollen. The temperature was 97·5° F. On probing the wound necrosed bone was found and in several places the probe seemed to enter the cranial cavity. Extradural abscess was diagnosed and the patient was admitted to hospital for operation. Under chloroform a three-inch incision was made through the seat of the abscess. The pericranium was found separated from the bone and was held back by retractors. An area of necrosed bone of the size of a dollar was exposed. It was of a dark brown colour and presented the appearance of a pepper-box in consequence of the numerous fistulæ through which pus oozed at each respiration. A button of bone was removed from the centre of the necrosed area with a half-inch trephine. An extradural abscess containing about an ounce of pus was found. The trephine opening was enlarged to the size of a dollar. The dura mater was found adherent to the frontal bone all around and formed the bed of the abscess. The removal of the necrosed bone opened the left frontal sinus which contained about half an ounce of pus. The right frontal sinus was opened and found to be healthy. The dura mater was of a dirty yellowish colour and pulsated only on the left side. On the 15th the patient's general condition was good and his mind was clearer but still not normal. There was a condition of irritability with semi-stupor and the urine was passed

involuntarily. On the 23rd there were transient paresis of the right internal rectus muscle and right optic neuritis. On the 24th he was more stupid. An aspirating needle introduced into the right frontal lobe was felt to enter a cavity and pus flowed through it. A pair of scissors was entered beside it and the blades were separated. About one and a half ounces of creamy pus and a yellowish lump of broken-down brain tissue were evacuated. The cavity was curetted and an iodoform gauze drain was introduced. The mental condition at once improved and the pulse rose from 78 to 100. On the following days the patient's condition continued to improve slowly and the abscess cavity grew smaller and the discharge less, but on the 30th there were symptoms of hypostatic congestion of the inferior lobe of the right lung and hæmoptysis. The wound was in good condition. On Oct. 3rd the left lung became involved. He grew worse and died on the 5th. At the necropsy a depressed fracture of the size of a hammer-head was found in the left parietal bone half an inch deep near the sagittal suture. The bone was healthy. This fracture was probably the result of the blow received two years previously. Around the trephine opening the dura mater was adherent to both the bone and the brain. It was also adherent to the depressed fracture. The brain showed an abscess cavity one and a half inches deep, surrounded by nearly normal tissue. The inferior lobes of the lungs were in a state of hypostatic congestion. Dr. Mertins thinks that but for the pulmonary complication the patient would have recovered from the cerebral abscess. The abscess was the result of the empyema of the frontal sinus. The posterior wall of the latter was necrosed and a fistulous tract led from the sinus to the extradural abscess.

A MUSICAL HYPNOTIC SÉANCE AT THE GARRICK THEATRE.

ON May 29th at the Grafton Galleries, under the auspices of the Sunday Concert Society, Madame Magdaleine, an artist who claims to interpret the emotions of music by dancing and artistic movements executed while in a state of induced "hypnotism," made her *début* in London. While in a "hypnotic" state on this occasion music was played and Madame Magdaleine illustrated the various moods reflected in the music by appropriate poses and dances. The musical instruments were a violin, a piano, a Mustel organ, and a celesta. A brief account of the séance was published in THE LANCET of June 4th, p. 1621. As doubt was expressed in some quarters as to the reality of the apparent hypnosis a matinée performance was given at the Garrick Theatre on June 9th, when, supported by music and scenery, Madame Magdaleine appeared on the stage and again went through her performance. She was introduced by a M. Magnin of Paris who seated her on a chair and, holding her two hands, gazed into her face for some seconds. He then made a few "passes" over her face until she passed into the supposed hypnotic condition and then led her to the centre of the stage. Music was then played and the artist began to dance. Her attitude was still and somewhat rigid until the first notes on the Mustel organ were struck. It then underwent a change. Consciousness seemed to light up, as it were, the face became expressive, and she danced and moved with grace and skill, interpreting the significance and the emotions of the music into movement with great facility. This was followed after a brief pause by a song, "Les Rameaux," sung by Mr. —— and accompanied on the Mustel organ. The artist danced and moved to this well-known song with exceeding animation and grace, all the appropriate emotions and attitudes of prayer and praise, devotion, joy, sorrow, and reverence being expressed with the highest art. Other items, four in number, followed, which concluded the first part of the programme. During the interval, at the invitation of M. Magnin, Madame Magdaleine was seen and briefly examined on the stage by a representative of THE LANCET. She was found to be in a condition of cataleptic rigidity of the arms and legs, the pupils were moderately contracted, and the eyeballs were converged and turned slightly downwards. The pupils reacted sluggishly to light. Her skin was covered with sweat from the exertions of the dance, but the pulse, though full and strong, was not accelerated, its beat averaging from 75 to 80 per minute. The knee-jerks were tested after relaxation of the legs was induced (by passes made by M. Magnin) and found to be absent, but as a slight degree of rigidity persisted in the legs this test could not be regarded as conclusive. The test for anæsthesia of the skin with a pin was not allowed. Madame Magdaleine's whole condition was suggestive of the hypnotic or somnambulistic stage, a condition of subconsciousness without any apparent spontaneity. She was now restored to consciousness by the passes of M. Magnin. During the second half of the programme the representative of THE LANCET stood at the wing of the stage and watched her closely, following every movement, action, and pose from an excellent position of observation. The dancer's eyes never for a moment dwelt, or seemed to dwell, upon the pianist or on any of the other instrumentalists on the stage, or upon any person at the wings of the stage, but were moved as though she were the subject of visual hallucinations during her dancing. Whether this was acting and feigned or whether real hallucinations were seen could not be decided in the time and by the means afforded. The performance was throughout characterised by grace and beauty of movement in dancing. Whatever may be said, Madame Magdaleine is a thorough artist and her dancing, gracefulness of movement, and wonderful power of facial and pantomimic expression constitute a performance worth seeing. The tests applied and the observations made by the representative of THE LANCET incline him to the belief that the hypnosis is genuine and not feigned, and that the performances are carried out during the hypnotic state. But a further study of this interesting case would be needed before all doubt could be settled as to the genuineness of the phenomena. M. Magnin states that Madame Magdaleine is a Russian-born woman of mixed French and Swiss parentage and that the family history of both her parents is free from serious neuroses or brain affections. She is married to a Frenchman and is the mother of two children. He also states that when not under the influence of hypnotism she is in no sense an artist nor has she any skill as a musician or interpreter of music into movement. The psychological aspects of this case are certainly of interest.

THE EAST LONDON MEDICAL SOCIETY AND HOSPITAL ABUSE.

THE East London Medical Society at a meeting held on May 17th decided to memorialise various hospitals on the subject of the abuse of hospital charity. Deputations from the society have met the house committees of two of the East London hospitals. The matter was discussed and it was promised that steps would be taken to diminish as far as possible certain abuses the existence of which was admitted. The abuses that the society complained of more particularly were: (1) the part-payment system at hospitals; and (2) the insufficiency of the scrutiny of patients to prevent treatment at hospitals of persons whose means render them unsuitable for relief at a charitable institution. The society also pointed out that the hospital authorities are almoners of the charitable public; that it is their

bounden duty to see that the money intrusted to them is applied in relieving deserving cases; that to expend it otherwise is to commit a grave breach of trust; and that to expend it on those whose means render them unfit for such relief is a course calculated to pauperise the recipients and to sap their independence of character. The society contends that a proportion of the funds subscribed by the charitable public is wasted on unsuitable subjects and it intends to press for reform at all institutions where these abuses exist. In order to give greater weight to its representations the society would strongly urge medical practitioners to join it, as it is fighting for reforms which intimately affect the whole profession and the charitably disposed public.

AN OUTBREAK OF CASES OF SORE-THROAT APPARENTLY CONNECTED WITH AN INFECTIVE ERUPTION ON THE TEATS OF COWS.

WE have received a report of considerable interest on a recent outbreak of infective sore-throat in the Fever and Small pox Hospitals at Belvidere, Glasgow, in which a considerable amount of evidence is adduced connecting it with an infective eruption on the teats of the cows from which the milk-supply was derived. The facts may be briefly summarised as follows. During the months of April and May 39 persons more or less directly connected with the institutions suffered from certain throat symptoms, variously regarded as tonsillitis and diphtheria, while 13 of the cases were so slight in character that no medical advice was sought. Bacteriologically a few of the cases showed diphtheria bacilli, a few others pseudo-diphtheria bacilli, and the remainder of those examined only streptococci. On considering the occupations of the various persons affected it became obvious that the disease was spread by a direct distribution from a common source rather than by secondary transmission among persons closely associated in their work and habitation. As certain cases occurred in the small-pox hospital and in the house steward's family attention was directed to the milk-supply, this being the only apparent circumstance in common between them and the fever hospital generally. After May 17th the milk supplied to the fever hospital was scalded and no further cases occurred there, but by a mistake in the instructions sent to the small-pox hospital the milk supplied there was not scalded till May 23rd and one case occurred there on the 27th. On investigating the source of the milk it was discovered that on April 23rd a new cow had been added to the herd which then numbered 72 in all. This cow had a slight eruption on the teats at the time but as this gave rise to no difficulty in milking little or no notice was taken of it. The cow was placed in one of the byres with a certain group of cows and within a few days it was moved to another byre and placed with another group. Subsequently the animals in both these groups were found to be suffering from a similar eruption on the teats and as a result 30 per cent. of the whole herd were affected. The disease appears to have lasted about three days, during which the animals gave some extra trouble in milking; after this, although the lesions persisted for a while, the cows took no notice of them and milking was not more difficult than usual. During the course of the epidemic the hands of four out of the eight milkers employed were affected with an eruption which subsequently healed and was apparently due to infection from the teats. As far as circumstantial evidence can go the connexion between the two conditions would appear to be a very close one. The direct or bacteriological proof is still engaging the attention of the medical officers. As far as this part of the investigation has gone, in one of the cases, that of a medical officer in charge of diphtheria wards, the organisms were those of true diphtheria, although it is, of course, possible that the original determining cause of the more virulent infection may have been the same infective agent as in the other cases acting by lowering resistance and thus favouring the diphtheritic infection. Dr. A. K. Chalmers, the medical officer of health and author of the report, is disposed to regard the throat symptoms as due to a septic infection arising from the growth of secondary organisms on the affected teats and conveyed in the milk. The complete bacteriological report of the present outbreak should be of great interest.

A VISIT OF FRENCH MEDICAL MEN TO LONDON.

Sir William S. Church, Bart., K.C.B., President of the Royal College of Physicians of London, will take the chair at a meeting to be held at the College, Pall Mall East, S.W., on Thursday, June 23rd, at 5 P.M., to consider the arrangements which should be made to receive the party of French physicians and surgeons who propose to visit London on Oct. 10th, 11th, and 12th. The appointment will be proposed of an executive committee containing representatives of the principal hospitals and laboratories in London which the French visitors may wish to see. The following committees have been organised in Paris:—*Comité de Patronage:* *M. Bouchard, professeur de pathologie générale; M. Brissaud, professeur de pathologie interne; M. Brouardel, professeur de médecine légale; M. Chantemesse, professeur à la Faculté; *M. Chauffard, professeur agrégé, médecin de l'Hôpital Cochin; M. Dieulafoy, professeur de Clinique Médicale; M. Joffroy, professeur de médecine mentale; *M. Landouzy, professeur de thérapeutique; *M. Marie, professeur agrégé, médecin de l'Hospice de Bicêtre; *M. Lucas Championniere, professeur; agrégé, chirurgien de l'Hôtel Dieu; M. Poirier, professeur d'Anatomie; M. Terrier, professeur de clinique chirurgicale; *M. Lermoyez, laryngologiste de l'Hôpital Saint Antoine; and *M. Sebileau, professeur agrégé, laryngologiste de l'Hôpital Lariboisiere. (Those marked * have expressed their intention of accompanying the party to London.) *Comité d'Organisation:* Dr. Triboulet, médecin des Hôpitaux, Président du Comité; Dr. Apert, médecin des Hôpitaux; Dr. Bezançon, professeur agrégé; Dr. Claude, professeur agrégé; Dr. Comby, médecin des Hôpitaux; Dr. Cunéo, professeur agrégé; Dr. Launay, chirurgien des Hôpitaux; Dr. Lombard, médecin des Hôpitaux; and M. Paul Lutaud, interne en exercice.

ARRANGEMENTS have been made by the Council of the Royal Institute of Public Health for a dinner on June 30th at 7 P.M. at the Criterion, Piccadilly, to the Right Hon. Joseph Chamberlain, M.P., in recognition of his services whilst Colonial Secretary to preventive and tropical medicine. The council will be glad to welcome anyone interested in these subjects. Tickets for the dinner can be obtained at 19, Bloomsbury-square, W.C. It is specially mentioned that the dinner has no political connexion.

THE King has given and granted to Dr. Donald Harvey Attfield, director and principal medical officer of the Suez Quarantine Office, the Royal licence and authority to accept and to wear the Imperial Ottoman Order of the Osmanieh, Fourth Class, which has been conferred upon him by his Highness the Khedive of Egypt, authorised by his Imperial Majesty the Sultan of Turkey, "in recognition of valuable services rendered to his Highness."

THE Queen has consented to visit the People's Palace, Mile-end, in order to open the annual summer flower show of the People's Palace and East London Horticultural Society, of which the Duke of Fife is President, on the afternoon of July 14th. The proceeds of this show are to be devoted to

the funds of the London Hospital, of which Her Majesty is the President.

AT the annual prize giving of the London (Royal Free Hospital) School of Medicine for Women, which will take place on Thursday, June 23rd, at 4 P.M., Professor T. Clifford Allbutt, F.R.S., Regius Professor of Physic at Cambridge, will present the prizes.

THE Right Hon. Lord Alverstone, G.C.M.G., Lord Chief Justice of England, will distribute the prizes to the students of St. Mary's Hospital Medical School, London, at the annual distribution on Wednesday, June 29th, at 4.45 P.M.

WE regret to announce the death of Mr. A. O. Mackellar, surgeon-in-chief to the Metropolitan Police and late senior surgeon to St. Thomas's Hospital.

THE INTERNATIONAL HOME RELIEF CONGRESS.

THE fourth of these congresses took place last week in Edinburgh and was attended by more than 400 members, more than half of whom were ladies, whilst several had come from France, Belgium, Holland, and other foreign countries. The first of these congresses was held in Paris in 1901, the second in Antwerp, and the third in Bordeaux. The idea of holding them arose at a Paris congress in 1900 which dealt with charitable work of every kind, the work of hospitals and other institutions being included. But the discussions which took place showed clearly that the questions relating to Home Relief presented special problems embracing so wide a field and of such urgent importance that it was resolved that in the future an independent congress should be devoted to their consideration.

Lord BALFOUR OF BURLEIGH, the President, in his opening address defined the general object of the conference as the discussion of those methods by which help could best be given to our weaker and less fortunate brethren without relegating them to special institutions where recipients of relief are congregated together. In many ways this system commends itself to Scotland, for last month the percentage of ordinary poor in the various poor-houses was only 13, compared with 87 per cent. receiving outdoor relief.

The congress was divided into five sections, most of which discussed matters of medical interest.

I.—CHILDREN.

Miss HORN (school manager under the London School Board) read a paper on the Feeding of Infants and School Children, with the object of showing that the feeding of children from the school as a centre was a bad method of relief.—Dr. H. W. THOMSON (Glasgow) dealt with the Eye Troubles of Children, especially Myopia and Strumous Ophthalmia, and pointed out that employers often refused to engage a man who was obliged to wear spectacles.—Dr. F. M. SANDWITH (London) described the objects of the Infants' Health Society and drew attention to the high infantile mortality of the United Kingdom.—Dr. W. ROBERTSON (Edinburgh) stated that pasteurised cow's milk ready mixed with water, sugar, and salt was now provided for 74 infants daily in separate bottles, for which the mothers paid 1*s.* 6*d.* a week and yet the milk depôt was self-supporting. During 15 months none of these children had died from diarrhœa.

In a crowded meeting to discuss the home care of mentally defective children the opinion was expressed that these could be trained and kept for life with most advantage to themselves and others in labour schools and colonies in the country where the workers might actually produce the food on which they lived.

II.—ABLE-BODIED ADULTS.

Mr. J. Q. DONALD (Fife), in a paper on What to Do with our Inebriates, stated that the only method in which he believed was the confinement of the patient in a retreat where it was necessary to implant in the patient's mind a loathing for his old habits. He quoted several cases which he had successfully treated.—Dr. J. F. SUTHERLAND (Edinburgh), on the other hand, thought that inebriates should be housed out in the country, but not more than two in any one house.—Dr. R. W. BRANTHWAITE (London) said that out of the last 1000 committals from England he did not know one case that could have been sent from the court to a private house over which any ordinary individual would have control.

III.—SICK ADULTS.

This section was presided over by Mr. MALCOLM A. MORRIS and began with a discussion on the Means of Home Attendance on Parturient Women in Large Centres, after papers by Dr. R. JARDINE (Glasgow), Dr. VAN DEVENTER (Amsterdam), Dr. W. J. SINCLAIR (Manchester), and Mrs. SCHARLIEB, M.D. (London). On the second day Dr. R. W. PHILIP (Edinburgh), while recognising the value of sanatoriums, pleaded for a properly equipped tuberculosis dispensary under the direction of the local authority as being the best means to organise the campaign against phthisis and a motion to this effect was unanimously carried. He calculated that there were now in Edinburgh 2500 persons who would die from tubercle during the next five years. At the Victoria Dispensary for Consumption 87 patients had attended on one day and there were up to the present time 13,360 patients on the books who had been visited at their homes by a willing staff of nurses and ladies. The meeting loudly applauded the view that the tuberculosis dispensary should be placed under the medical officer of health and under the local authority. Besides the tuberculosis dispensary Dr. Philip recommended a home for dying patients, chiefly in the interests of other persons; sanatoriums for selected patients who required a special régime not procurable in their own homes; and colonies for the after-life and supervision of patients in whom the disease had been sufficiently arrested to make selected open-air employment feasible and desirable.—A paper was read from Professor CALMETTE (Lille) describing his tuberculosis dispensary started three years ago for superintending ex-patients. 100 families received daily rations of coals, meat, milk, and eggs, while their linen was washed for them and their houses were disinfected periodically.—Professor J. A. LINDSAY (Belfast) reported two reforms from his municipality—the appointment of two female inspectors for visiting ex-patients and the gratuitous examination for tubercle of sputa.

After a debate on the third day on the relation between hospital and home relief of sick poor the following motion was carried:—

> That in the opinion of this Congress the time has now come when, with a view to the proper direction of charitable effort and the prevention of hospital abuse, close relations should be established between the hospitals, dispensaries, the medical profession, and the public for the regulation of indoor and outdoor relief of sick poor by the institution in every populous centre of a general hospitals committee composed of representatives of hospital, dispensary and nursing boards, hospital and dispensary staffs, general practitioners, contributors, and wage-earning members of the community for the purpose of determining the conditions of admissions to hospital and other medical relief, the collection of revenue, the prevention of overlapping, and such other questions as experience may suggest.

IV.—INSANE AND EPILEPTICS.

Dr. A. ROBERTSON (Glasgow) opened a discussion on the Scottish system of boarding out the insane poor in private dwellings.—Mr. CONOLLY NORMAN (Dublin) said in his remarks that there was in Ireland one person of unsound mind to every 178 of the general population.—Sir JOHN SIBBALD (Edinburgh), in speaking of the Bill just introduced in the House of Commons by the Attorney-General to permit cases of doubtful or incipient insanity being sent to private homes for a period not exceeding six months without the formality of certificates, said he greatly objected to applying to the insane a word which could be made to refer to them alone. He welcomed the substitution of "hospitals" for "asylums" and said in Edinburgh they had now gone one step further, for there was a new asylum being constructed which is to be called "The Bangour Village."

An important discussion on epileptic colonies took place. Dr. J. M. RHODES (Manchester) stated that there were certainly not less than 70,000 epileptics in Great Britain and for the treatment of that number there was not one single State institution for the proper scientific care of the sane epileptic.—Dr. FLETCHER BEACH (London) mentioned that the number of colonists was now 196 at the Chalfont Farm in Buckinghamshire.—Dr. D. FRASER (Paisley) contributed a paper with special reference to the colony at Bethal in

Westphalia and the proposed colony at Bridge of Weir in Scotland.

Section V. dealt with various problems connected with old age. The Congress ended with the usual dinner and an announcement that the next year's meeting will be at Liége, while an invitation has been received to hold the Congress of 1906 in Milan. The citizens of Edinburgh vied with each other in showering splendid hospitality, both public and private, on the members of the Congress.

THE INDIAN MEDICAL SERVICE: ANNUAL DINNER.

THE annual dinner of the Indian Medical Service was held at the Café Monico on June 9th under the presidency of Surgeon-General Sir ANNESLEY C. C. DE RENZY, K.C.B. In all some 65 members of the service were present and after the usual loyal toasts which were proposed by Sir ANNESLEY DE RENZY the toast of the sister services was given by Colonel W. E. CATES. Sir JAMES DICK, in responding for the Royal Navy Medical Service, pointed out that both naval and military medical officers owed a great debt of gratitude to the Indian Medical Service seeing that a distinguished member of that service—viz., Sir Ranald Martin—was instrumental in obtaining for medical officers the Order of the Bath in the military division which had hitherto been strictly confined to combatant officers. Surgeon-General A. KEOGH, who responded for the Royal Army Medical Corps, referred to the solidarity which distinguishes the Indian Medical Service. The toast of "The Guests" was proposed by Sugeon-General Sir JOSEPH FAYRER and responded to by Sir RICHARD DOUGLAS POWELL, while the toast of the evening—that of "The Indian Medical Service"—was proposed by Mr. JONATHAN HUTCHINSON who referred in terms of gratitude to the kindliness with which he had been received by the Indian Medical Service during his late tour through India. The toast was acknowledged in a brief speech by Sir ANNESLEY DE RENZY. Before the conclusion of the evening Sir ANNESLEY DE RENZY paid a warm tribute to the services of Lieutenant-Colonel P. J. Freyer who acted as secretary of the dinner and who, in acknowledging the compliment, referred in very grateful terms to the help given to the Indian Medical Service by THE LANCET and the *British Medical Journal*. Miss Mary Boyd contributed to the success of a very enjoyable evening by singing various songs.

The following members were present:—

Surgeon-Generals: W. W. Beatson, A. M. Branfoot, C.I.E., Sir Annesley De Renzy, K.C.B., Sir J. Fayrer, Bart., K.C.S.I., F.R.S., C. Sibthorpe, C.B., and P. W. Sutherland.

Colonels: C. W. Carr-Calthrop, W. E. Cates, W. Gray, D. Erskine Hughes, C. H. Joubert, Sir George King, K.C.I.E., F.R.S., M. D. Moriarty, G. S. Sutherland, and W. A. S. Wynne.

Lieutenant-Colonels: J. Anderson, M. L. Bartholomeusz, S. Bigger, R. H. Charles, A. Crombie, C.B., E. F. Drake-Brockman, A. O. Evans, P. J. Freyer, T. Grainger, P. de H. Haig, I. B. Lyon, C.I.E., R. W. S. Lyons, C. P. Lukis, D. P. MacDonald, J. Moorhead, T. R. Mulroney, D. ff. Mullen, P. F. O'Connor, C.B., W. A. Sykes, W. H. Thornhill, and J. F. Tuohy.

Majors: A. Buchanan, W. S. Caldwell, F. Carter, G. A. W. Hall, C. Herbert, C. Mactaggart, R. C. MacWatt, J. Penny, W. H. B. Robinson, R. Ross, C.B., F.R.S., and S. Browning Smith.

Captains: H. Burden, E. M. Illington, F. O. N. Mell, A. E. Hayward Pinch, and C. E. Williams.

Lieutenant: F. W. Sumner.

The guests were: Sir Richard Douglas Powell, Bart., K.C.V.O., President of the Royal Medical and Chirurgical Society; Inspector-General Sir James Dick, K.C.B., R.N.; Surgeon-General A. Keogh, C.B., Deputy Director-General A.M.S.; Mr. Jonathan Hutchinson, F.R.S.; Dr. de Havilland Hall, President of the Medical Society; Dr. H. P. Cholmeley, representing THE LANCET; and Mr. Eastes, representing the *British Medical Journal*.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 17, 1826.

FOREIGN DEPARTMENT.

ANATOMY.

Lymphatics and Veins.

One of the most valuable discoveries with which anatomical science has been enriched in modern times, is the discovery of the communication between the lymphatics and veins. Several physiologists observed, that substances found their way from the intestines into the system, in cases where the thoracic duct had been either tied or destroyed by disease; and the question naturally arose, in what way was this effected? Sir Everard Home, as early as 1807, (vid. Phil. Transactions, 1807) from experiments made on asses, concluded, that rhubarb was taken into the system in some other way than by the thoracic duct, and at the same time assumed that the spleen was the medium through which the passage was effected, since the colouring matter was found earlier in the veins of the spleen, than those of the liver, and always there in larger quantities than in any of the other vessels. In a paper read before the Royal Society in 1811, Sir E. H. relinquished this last opinion, but confirmed by fresh experiments on dogs and rabbits, performed in the presence of Brodie, Brande, Clift, and Gatcombe, his former one; as by these he demonstrated the presence of rhubarb in the secreted fluids, without any trace of it to be found in the thoracic duct, which had been previously tied. Jaeckel (*Dissert. Inaug. de Absorptione Venosa. Vratislaw*, 1819) pursued this subject still further; he destroyed the lymphatic vessels leading from a portion of intestine, then tied the part, and injected into it a solution of prussiate of potash; from a quarter to half an hour, he found this substance in the blood. For the greatest number of experiments on the mode in which substances get into the blood from the stomach and intestines, we are indebted to Gmelin and Tiedemann *; they found in the veins of the intestines, camphor, musk, indigo, rhubarb, prussiate and sulphate of potash, lead and iron, and besides these, they found in the veins of the spleen, spirits of wine, quicksilver and barytes and in the vena porta in addition to these dippelsoil substances, of which only very few could be found in the thoracic duct. Several physiologists have since come forward in support of the opinion that the veins of the intestines possess the power of absorption, and from the observation of the facts above mentioned and similar ones, the old theory of venous absorption generally, has been revived. Among the advocates of this last opinion, Magendie may be considered the principal. In 1820, however, a new light was thrown on the subject by Vincent Fohmann, of Heidelberg †; this young anatomist succeeded, after repeated trials, in throwing quicksilver from the lymphatic vessels into the veins of the intestines, and into the vena porta, both in animals and in the human subject. This was done in Tiedemann's and Gmelin's presence on two dogs, a horse, a cow, and three men. The injection was made with great care, and without any external force being used. In 1821, Fohmann published his investigations in detail, and added to these others, which he had since made; and we have been informed by a gentleman who recently saw Fohmann's preparations at Heidelberg, that he intends publishing a cheap work *¹ in four parts, with plates, showing the connexion between the two sets of vessels in the four classes of vertebrated animals. The first part is to treat of the absorbents of fishes, and has most probably by this time appeared. In 1824, the subject was investigated in Italy, and the Antologia of Firenza announced, that Dr. Regolo Lippi †¹ had discovered that several lymphatic trunks opened directly into the veins. Since that time Dr. Rossi made the

* Tiedemann und Gmelin Versuche uber die Wege, auf welchen Substanzen aus dem Magen und Darmkanal ins Blut gelangen, &c. Heidelberg. 8vo. 1820.

† Salzburger Med. Chirurg. Zeitung, for 1820, Vol. II. p. 319; Vol. III. p. 175.

*¹ Anatomische Untersuchungen uber die Verbindung der Sungadern mit den Venen. 12mo. Heidelberg, 1821.

†¹ Omodei's Annali di Medicina, Vol. XXXII. p. 75.

same observations, an account of which we now lay before our readers. The establishment of such an important fact as a direct communication between the lymphatics and veins, is of the highest importance, and we may safely anticipate from it new light on the pathology and treatment of several diseases.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are some of the principal amounts received at the Mansion House, or notified directly to us as having been collected, on behalf of the Metropolitan Hospital Sunday Fund up to Wednesday last, when the sum paid in amounted to £14,000. It is, of course, too early as yet to express any definite opinion as to the probable results of the efforts put forth on Sunday last in the metropolis; but we are glad to learn, on the authority of the excellent Secretary of the Fund, Sir Edmund Hay Currie, that there is every hope that the total will reach, and will probably slightly exceed, that of last year. A notable feature of this year's collection is the large sum received from St. Paul's Cathedral—up to the present over £5000—nearly equalling the £5300 received on the occasion of the King's visit last year, and contrasting well with the £1600 of 1902, the £229 of 1901, and the £255 of 1900. We congratulate the citizens of London on their increasing interest in the welfare of their poorer brethren in the matter of hospital and dispensary accommodation.

	£	s.	d.
St. Paul's Cathedral	5000	0	0
Christ Church, Lancaster-gate	1510	0	0
St. Michael's, Chester-square	1376	0	0
Theistic Church, Swallow-street	315	0	0
City Temple	302	0	0
Christ Church, Chislehurst	231	0	0
St. Luke's, Redcliffe-square	188	0	0
St. Augustine's, Highbury	144	0	0
St. Barnabas, Kensington	140	0	0
St. Paul's, Presbyterian Church, Westbourne-grove	125	0	0
St. George's, Bickley	106	0	0
Aldenham Church, Herts	97	0	0
Church of the Annunciation, Chislehurst	90	0	0
St. George's, Beckenham	84	0	0
St. James's, Muswell-hill	82	0	0
Bromley, Kent, Parish Church	80	0	0
St. Saviour's, Ealing	77	0	0
St. Anne's, Wandsworth	75	0	0
St. Augustine's, Queen's-gate	74	0	0
St. Andrew's Presbyterian Church, Frognal	66	0	0
St. Mary's, Shortlands	60	0	0
All Saints, North Peckham	58	0	0
Central Hill Baptist Chapel, Norwood	58	0	0
Winchmore-hill Parish Church	56	0	0
St. George's, Perry Hill	55	0	0
St. Paul's, Camden-square	54	0	0
St. Augustine's, Kilburn	54	0	0
St. Gabriel's, Pimlico	54	0	0
Dulwich College Chapel	53	0	0
St. Mary's, Plaistow	52	0	0
St. Matthias, Earl's Court	52	0	0
Clapton Park Congregational Church	51	0	0
St. John's, Redhill	50	0	0
Crouch Hill Presbyterian Church	50	0	0
Merton Parish Church	50	0	0
St. Luke's, Battersea	47	0	0
St. John's, Sideup	47	0	0
St. John's, Ealing Dean	46	0	0
Holy Trinity, Eltham	45	0	0
St. Mary's Old Church, Stoke Newington	42	0	0
Guard's Chapel	42	0	0
St. Mary Magdalene, Enfield	41	0	0
St. Luke's, West Hampstead	40	0	0
St. Saviour's, Denmark-park	39	0	0
St. Matthew's, Brixton	38	0	0
St. Mary the Virgin, Hayes	38	0	0
Hornchurch Church	38	0	0
St. Saviour's, Southwark	38	0	0
West Wickham Church	37	0	0
Parish Church, Pinner	36	0	0
West London Mission, St. James's Hall	36	0	0
St. Mark's, Bromley	35	0	0
Trinity Presbyterian Church, Hampstead	34	0	0
St. Michael's, Betchworth	34	0	0
St. Andrew's, Totteridge	33	0	0
All Saints, Friern Barnet	33	0	0
Chipping Barnet Parish Church	33	0	0
St. Gabriel's, Willesden-green	32	0	0
Chiswick Parish Church	31	0	0
St. Jude's, Chelsea	31	0	0
Mitcham Parish Church	30	0	0
St. Stephen's, Clapham	30	0	0
St. James's, Camberwell	29	0	0
St. Mary Aldermanbury	29	0	0
St. Mary Magdalene, Munster-square	28	0	0
Effra-road Unitarian Church, Brixton	28	0	0
Archway-road, Highgate, Wesleyan Church	28	0	0
Magdalen Hospital Chapel, Streatham	27	0	0
Putney Parish Church	27	0	0
Woodbury Down Baptist Church	27	0	0
Whitfield's Tabernacle	26	0	0
St. James's, Garlick-hill	25	0	0
St. Peter's, Hersham	25	0	0
Blackheath Wesleyan Church	25	0	0
Chislehurst Wesleyan Chapel	24	0	0
St. John's Wood Chapel	24	0	0
Christ Church, Hornsey	23	0	0
All Saints, Child's Hill	23	0	0
Regent's Park Chapel	23	0	0
Holy Trinity, Lamorbey	23	0	0
Upper Holloway Baptist Chapel	23	0	0
Crayford Parish Church	22	0	0
Trent Church, Enfield	22	0	0
Orange-street Congregational Church	22	0	0
St. Cyprian's, Brockley	22	0	0
St. Mary Magdalene, Woolwich	22	0	0
St. Matthias, Upper Tulse Hill	21	0	0
St. Peter's, Barnet	21	0	0
St. George's Chapel, Windsor Castle	21	0	0
Wesley's Chapel, City-road	20	0	0
Northwood Parish Church	20	0	0
St. Giles's, Farnborough	20	0	0
Leyton Parish Church	20	0	0
Paddington Congregational Church, Marylebone-road	20	0	0

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8987 births and 4136 deaths were registered during the week ending June 11th. The annual rate of mortality in these towns, which had been 15·5, 15·4, and 14·6 per 1000 in the three preceding weeks, further declined last week to 14·1 per 1000. In London the death-rate was 13·3 per 1000, while it averaged 14·5 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 7·0 in Walthamstow, 7·1 in Willesden and in Aston Manor, 7·7 in Hornsey and in Smethwick, 8·0 in Great Yarmouth, 8·5 in Leyton, 8·7 in Newport (Mon.), 9·0 in West Hartlepool, and 9·2 in Plymouth; while the highest rates were 18·9 in Middlesbrough and in South Shields, 20·0 in Stockton-on-Tees, 20·4 in Sunderland and in Newcastle-on-Tyne, 20·5 in Liverpool, 22·6 in Tynemouth, and 25·6 in Warrington. The 4136 deaths in these towns last week included 492 which were referred to the principal infectious diseases, against 528, 519, and 495 in the three preceding weeks; of these 492 deaths 202 resulted from measles, 124 from whooping-cough, 72 from diarrhœa, 38 from diphtheria, 25 from scarlet fever, 24 from "fever" (principally enteric), and seven from small-pox. No death from any of these diseases was registered last week in Willesden, Hastings, Bournemouth, Burton-on-Trent, West Bromwich, Smethwick, Aston Manor, Stockton-on-Tees, or Merthyr Tydfil; while the highest death-rates from the principal infectious diseases were recorded in Ipswich, Norwich, Hanley, Birkenhead, Wallasey, Warrington, Salford, Blackburn, and Rhondda. The greatest proportional mortality from measles occurred in Croydon, Walthamstow, Norwich, Hanley, Birkenhead, Wallasey, Salford, Rochdale, Rotherham, and Rhondda; from diphtheria in Hanley; from whooping-cough in King's Norton, Grimsby, Warrington, Blackburn, and Swansea; and from diarrhœa in Reading. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. Of the seven fatal cases of scarlet fever registered in these towns two belonged to Bradford and one each to Leicester, Derby, Manchester, Newcastle-on-Tyne, and Tynemouth. The number of small-pox patients in the Metropolitan Asylums hospitals, which had been 96, 118, and 96 on the three preceding Saturdays, had further declined to 95 on Saturday last, June 11th; 21 new cases were admitted during the week, against 18, 33, and 10 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 1647, against 1630, 1663, and 1673 at the end of the three preceding weeks; 193 new cases were admitted during the week, against 222, 194, and 207 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 210, 188, and 181 in the three preceding weeks, further fell last week to 157 but were 16 in excess of the number in the corresponding period of last year. The causes of 48, or 1·2 per cent., of the deaths registered in

the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bolton, Salford, Bradford, Hull, Newcastle-on-Tyne, Cardiff, and in 44 other smaller towns, while the highest proportions of uncertified deaths were registered in Northampton, Birmingham, Liverpool, Warrington, Halifax, Sheffield, Sunderland, South Shields, and Swansea.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·7, 17·6, and 18·1 per 1000 in the three preceding weeks, declined again to 16·2 per 1000 during the week ending June 11th but was 2·1 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·2 in Greenock and 13·0 in Leith to 22·3 in Paisley and 29·2 in Perth. The 536 deaths in these towns included 24 which were referred to diarrhœa, 21 to whooping-cough, 16 to measles, four to diphtheria, three to small-pox, three to scarlet fever, and two to "fever." In all, 73 deaths resulted from these principal infectious diseases last week, against 58, 62, and 64 in the three preceding weeks. These 73 deaths were equal to an annual rate of 2·2 per 1000, which was 0·5 per 1000 in excess of the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 15, 13, and 14 in the three preceding weeks, increased last week to 24, of which 12 occurred in Glasgow, three in Dundee, three in Aberdeen, two in Paisley, and two in Leith. The deaths from whooping-cough, which had been 29 and 26 in the two preceding weeks, further declined to 21 last week and included nine in Glasgow, four in Edinburgh, three in Aberdeen, two in Dundee, and two in Paisley. The fatal cases of measles, which had been 16, 12, and 16 in the three preceding weeks, were again 16 last week and incldued eight in Glasgow, four in Edinburgh, and three in Greenock. The deaths from diphtheria, which had been three in each of the two preceding weeks, rose last week to four, of which two were registered in Dundee. The fatal cases of small-pox, which had been two, one, and two in the three preceding weeks, further increased to three last week, and all belonged to Glasgow, where two of the three deaths from scarlet fever also occurred. The deaths referred to diseases of the respiratory organs in these towns, which had been 97, 85, and 87 in the three preceding weeks, declined again last week to 68, and were seven below the number in the corresponding period of the preceding year. The causes of 24 or nearly 5 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·9, 21·3, and 19·7 per 1000 in the three preceding weeks, further declined to 18·3 per 1000 during the week ending June 11th. During the past four weeks the death-rate has averaged 20·3 per 1000, the rates during the same period being 14·0 in London and 17·5 in Edinburgh. The 133 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 10 from the number in the preceding week and included four which were referred to the principal infectious diseases, against 13, eight, and 16 in the three preceding weeks; of these, one resulted from measles, one from scarlet fever, one from whooping-cough, and one from "fever," but not any from small-pox, from diphtheria, or from diarrhœa. These four deaths were equal to an annual rate of 0·6 per 1000, the death-rates last week from the principal infectious diseases being 1·5 in London and 1·7 in Edinburgh. The 133 deaths in Dublin last week included 18 among children under one year of age and 29 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a considerable decline from the respective numbers recorded in the preceding week. Four inquest cases and two deaths from violence were registered and 59, or more than three-sevenths, of the deaths occurred in public institutions. The cause of five, or nearly 4 per cent., of the deaths registered in Dublin last week was not certified.

VITAL STATISTICS OF LONDON DURING MAY, 1904.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·9 per 1000 of the population, estimated to be 4,648,950 in the middle of the year. In the three preceding months the rates had been 4·8, 4·9, and 5·1 per 1000. The rates were considerably below the average in Chelsea, the City of Westminster, Holborn, Battersea, and Lewisham; while they showed the largest excess in St. Pancras, Hackney, Finsbury, Bethnal Green, Stepney, and Poplar. The prevalence of small-pox during May showed a slight decline from that recorded in either of the two preceding months; among the various metropolitan boroughs the greatest proportional prevalence of this disease occurred in Islington, Bethnal Green, Stepney, Southwark, Bermondsey, and Lambeth. The Metropolitan Asylums hospitals contained 118 small-pox patients at the end of May, against 31, 126, and 104 at the end of the three preceding months; the weekly admissions averaged 23, against six, 31, and 24 in the three preceding months. Scarlet fever was considerably more prevalent last month than it had been during any of the preceding months of the year; the greatest proportional prevalence of this disease was recorded in St. Pancras, Finsbury, Bethnal Green, Stepney, and Poplar. The number of scarlet fever patients under treatment in the Metropolitan Asylums hospitals, which had been 1560, 1546, and 1515 at the end of the three preceding months, had risen again to 1632 at the end of last month; the weekly admissions averaged 219, against 153, 160, and 173 in the three preceding months. The prevalence of diphtheria last month slightly exceeded that in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Bethnal Green, Poplar, and Wandsworth. The Metropolitan Asylums hospitals contained 755 diphtheria patients at the end of last month, against 782, 786, and 718 at the end of the three preceding months; the weekly admissions averaged 113, against 107, 94, and 97 in the three preceding months. The prevalence of enteric fever last month showed no variation from that recorded in the preceding month; the greatest proportional prevalence of this disease occurred in Paddington, St. Marylebone, Hampstead, St. Pancras, Stoke Newington, and Hackney. The number of enteric fever patients in the Metropolitan Asylums Hospitals, which had been 125, 86, and 62 at the end of the three preceding months, had further declined to 51 at the end of May; the weekly admissions averaged ten, against 15, 11, and nine in the three preceding months. Erysipelas was proportionally most prevalent in Stoke Newington, Finsbury, Holborn, Southwark, Camberwell, and Deptford. The 17 cases of puerperal fever notified during the month included two each in Paddington, Finsbury, Stepney, Bermondsey, and Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in public institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending May 28th the deaths of 5200 persons belonging to London were registered, equal to an annual rate of 13·9 per 1000; in the three preceding months the rates had been 18·2, 16·7, and 16·2 per 1000. The lowest death-rates in London last month were 9·8 in Hampstead, 11·3 in Hammersmith, 11·8 in Lewisham, and 11·9 in Kensington and in Stoke Newington; while the highest rates were 19·0 in Stepney, 19·2 in Finsbury, 19·5 in Bethnal Green, 20·0 in the City of London, 20·5 in Holborn, and 22·2 in Bermondsey. The 5200 deaths from all causes in London last month included 640 which were referred to the principal infectious diseases; of these, three resulted from small-pox, 306 from measles, 19 from scarlet fever, 63 from diphtheria, 163 from whooping-cough, 11 from enteric fever, one from simple continued fever, and 74 from diarrhœa. The lowest death-rates from these diseases were recorded in Paddington, Kensington, the City of Westminster, St. Marylebone, Hampstead, and the City of London; and the highest rates in Holborn, Stepney, Poplar, Southwark, Bermondsey, and Deptford. Of the three fatal cases of small-pox registered last month one belonged Paddington, one to Bethnal Green, and one to Stepney. The 306 deaths from measles were 24 in excess of

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MAY, 1904.

(Specially compiled for THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1904.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,648,950	87	1015	556	2	8	2	17	335	—	2092	5·9	3	306	19	63	163	—	11	1	74	640	1·8	5200	13·9	107
West Districts.																										
Paddington	146,975	—	26	8	—	4	—	2	7	—	47	4·2	1	1	—	—	1	—	—	—	1	4	0·4	137	12·2	83
Kensington	179,236	1	32	22	—	2	—	—	10	—	67	4·9	—	2	—	2	1	—	—	—	2	7	0·5	163	11·9	103
Hammersmith	117,412	—	25	17	—	2	—	—	10	—	54	6·0	—	8	—	2	1	—	—	—	1	12	1·3	102	11·3	103
Fulham	152,482	—	19	15	—	3	—	1	9	—	47	4·0	—	10	—	1	4	—	1	—	5	21	1·8	160	13·7	125
Chelsea	74,329	—	6	6	—	—	—	1	4	—	17	3·0	—	3	—	1	1	—	—	—	—	5	0·9	91	16·0	44
City of Westminster	177,321	—	25	9	1	1	—	1	12	—	49	3·6	—	2	—	—	1	—	—	—	4	7	0·5	182	13·4	105
North Districts.																										
St. Marylebone	130,337	—	16	10	—	5	—	—	9	—	40	4·0	—	5	—	1	—	—	—	—	—	6	0·6	146	14·6	75
Hampstead	86,663	—	19	1	—	4	—	—	7	—	31	4·7	—	2	—	—	1	—	—	—	—	3	0·5	65	9·8	66
St. Pancras	235,936	—	80	35	—	7	—	—	5	—	127	7·0	—	6	2	2	6	—	—	—	5	21	1·2	247	13·6	103
Islington	341,044	5	97	15	—	5	—	—	20	—	142	5·4	—	17	1	1	4	—	3	—	3	29	1·1	333	12·7	111
Stoke Newington	52,445	1	13	3	—	3	—	—	5	—	25	6·2	—	2	—	2	1	—	1	—	—	6	1·5	48	11·9	98
Hackney	226,266	2	52	59	—	6	1	1	13	-	134	7·7	—	4	2	5		-	—	—	2	20	1·2	214	12·3	97
Central Districts.																										
Holborn	57,161	1	3	6	—	1	—	—	6	—	17	3·9	—	7	—	1	2	—	1	—	1	12	2·7	90	20·5	111
Finsbury	98,958	1	33	15	—	2	—	2	11	—	64	8·4	—	5	2	2	6	—	—	—	2	17	2·2	146	19·2	140
City of London	23,482	—	7	2	—	1	—	—	1	—	11	6·1	—	—	—	—	1	—	—	—	—	1	0·6	36	20·0	107
East Districts.																										
Shoreditch	117,033	1	23	23	—	—	—	1	11	—	59	6·6	—	4	1	3	8		—	—	4	20	2·2	135	15·0	129
Bethnal Green	130,207	38	50	21	—	—	—	1	11	—	121	12·1	1	6	2	2	5	—	—	—	1	17	1·7	195	19·5	172
Stepney	303,791	10	92	42	1	3	—	2	26	—	176	7·6	1	33	2	5	15	—	2	—	6	64	2·7	443	19·0	146
Poplar	169,905	2	60	86	—	1	—	—	14	—	163	12·5	—	14	2	14	5	—	—	—	2	37	2·8	210	16·1	144
South Districts.																										
Southwark	207,937	10	30	13	—	1	—	—	21	—	75	4·8	—	56	2	4	11	—	1	—	5	79	5·0	288	18·1	141
Bermondsey	129,397	5	27	9	—	3	1	2	12	—	59	5·9	—	28	—	1	7	—	-	1	1	38	3·8	220	22·2	158
Lambeth	310,359	5	52	18	—	8	—	—	18	—	101	4·2	—	23	1	1	18	—	1	—	4	48	2·0	342	14·4	102
Battersea	175,466	—	20	15	—	3	—	—	10	—	48	3·6	—	13	1	1	4	—	—	—	10	29	2·2	190	14·1	143
Wandsworth	257,448	1	59	45	—	3	—	2	17	—	127	6·4	—	13	—	6	10	—	—	—	6	35	1·8	256	13·0	106
Camberwell	268,384	3	57	18	—	4	—	—	33	—	115	5·6	—	16	—	1	15	—	—	—	1	33	1·6	260	12·6	98
Deptford	113,509	—	29	10	—	—	—	1	14	—	54	6·2	—	16	—	1	8	—	—	—	2	27	3·1	140	16·1	127
Greenwich	101,651	1	17	15	—	2	—	—	6	—	41	5·3	—	6	—	1	2	—	—	—	1	10	1·3	101	13·0	131
Lewisham	140,401	—	15	10	—	3	—	—	11	—	39	3·6	—	1	1	—	4	—	—	—	2	8	0·7	127	11·8	122
Woolwich	123,416	—	30	8	—	1	—	—	2	—	41	4·3	—	3	—	3	14	—	1	—	3	24	2·5	133	14·0	107
Port of London	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

the average number in the corresponding periods of the ten preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Holborn, Stepney, Poplar, Southwark, Bermondsey, and Deptford. The fatal cases of scarlet fever numbered 19 last month, against an average of 48 in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in St. Pancras, Hackney, Finsbury, Bethnal Green, Poplar, and Southwark. The 63 deaths from diphtheria were equal to exactly one-half of the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Stoke Newington, Hackney, Shoreditch, Poplar, Wandsworth, and Woolwich. The 163 fatal cases of whooping-cough showed a decline of 39 from the average number in the corresponding periods of the ten preceding years; the greatest proportional mortality from this disease occurred in Finsbury, Shoreditch, Lambeth, Camberwell, Deptford, and Woolwich. The deaths from "fever" numbered 12 last month, the corrected decennial average being 27; the highest "fever" death-rates occurred in Fulham, Islington, Stoke Newington, Holborn, Stepney, Bermondsey, and Woolwich. The 74 fatal cases of diarrhœa were 21 in excess of the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, the City of Westminster, Shoreditch, Southwark, Battersea, Wandsworth, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 15 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 107 per 1000. The lowest rates of infant mortality were recorded in Paddington, Chelsea, St. Marylebone, Hampstead, Stoke Newington, Hackney, and Camberwell; and the highest rates in Finsbury, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Battersea.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: P. T. Nicholls to the *Mutine* and J. H. Jones to the *Lizard*.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon William Spencer Lightfoot has been placed on the Retired List at his own request, with permission to assume the rank of Retired Deputy Inspector-General of Hospitals and Fleets (dated June 9th, 1904).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant G. R. Livingston to be Surgeon-Captain (dated June 5th, 1904).

VOLUNTEER CORPS.

Rifle: 1st Cadet Battalion the Queen's (Royal West Surrey Regiment): Surgeon-Lieutenant A. C. Elliman to be Surgeon-Captain (dated June 11th, 1904). 3rd (The Blythswood) Volunteer Battalion the Highland Light Infantry: Supernumerary Surgeon-Major A. D. Moffatt to command the Highland Light Infantry Bearer Company, Royal Army Medical Corps (Volunteers), vice Surgeon-Major Q. Chalmers, 5th Volunteer Battalion the Highland Light Infantry, who has vacated the appointment (dated June 11th, 1904). 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry: Supernumerary Surgeon-Major Q. Chalmers is appointed Brigade-Surgeon-Lieutenant-Colonel whilst holding the appointment of Senior Medical Officer to the Highland Light Infantry Volunteer Brigade, and to remain Supernumerary (dated June 11th, 1904). 1st (Ross Highland) Volunteer Battalion Seaforth Highlanders (Ross-shire Buffs, the Duke of Albany's): Surgeon-Major J. Adam to be Surgeon-Lieutenant-Colonel (dated June 11th, 1904). 7th Volunteer Battalion the Gordon Highlanders: Surgeon-Lieutenant J. F. Robertson to be Surgeon-Captain (dated June 11th, 1904).

Consequent upon the division of the 1st Cheshire and Carnarvonshire Royal Garrison Artillery (Volunteers) into two Corps, designated respectively the 1st Cheshire Royal Garrison Artillery (Volunteers) and the 1st Carnarvonshire Royal Garrison Artillery (Volunteers), His Majesty has been graciously pleased to approve of the following, with effect from June 4th, 1904:—1st Cheshire Royal Garrison Artillery (Volunteers): Honorary Assistant Surgeon, R. E. Owen; Surgeon-Major, A. M. Archer; Surgeon-Captains, R. B. Wright and T. G. Lusk. 1st Carnarvonshire Royal Garrison Artillery (Volunteers): Surgeon-Lieutenant-Colonel, E. J. Lloyd; Surgeon-Lieutenant, C. W. Owen.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Wilts and Dorset Bearer Company: Surgeon-Major H. J. Mackay, from 2nd Volunteer Battalion the Duke of Edinburgh's (Wiltshire Regiment), to be Major and to command (dated June 11th, 1904); Surgeon-Captain R. G. Worger, from 1st Volunteer Battalion the Prince Albert's (Somersetshire Light Infantry), to be Captain (dated June 11th, 1904).

DEATHS IN THE SERVICES.

Inspector-General Maxwell Rodgers, R.N., at his residence in Southsea on June 8th, in his seventy-second year. The deceased, who graduated M.D. of the University of Glasgow and took the qualification of M.R.C.S. Eng. in 1857, entered the Royal navy in the same year, and retired in 1893 with the rank of inspector-general of hospitals. As assistant surgeon he served in the *Belleisle* and attended on the wounded during the operations at the Peiko Forts in 1858 (China medal). He served as surgeon of the *Assurance* during an outbreak of fever and cholera which broke out on that ship when in the river Danube and Black Sea in 1865. He was fleet surgeon of the *Monarch* at the bombardment of Alexandria on July 11th, 1882, and was present at the occupation of Port Said (Egyptian medal. Alexandria clasp, and the Khedive's bronze star). He was granted the Greenwich Hospital pension in November, 1896.

Brigade-Surgeon William ffolliott, R.A.M.C. (retired), on June 8th, from heart failure, following an attack of influenza, at the age of 65 years. He received his medical education in Ireland, entered the army in 1862, and retired in 1890. He served in the Afghan war of 1878–80 (medal).

THE POST OF DIRECTOR-GENERAL OF THE ROYAL NAVY MEDICAL SERVICE.

In THE LANCET of June 11th we announced that Inspector-General of Hospitals and Fleets H. M. Ellis had been selected to succeed Sir Henry Norbury. Inspector-General Ellis entered the service in 1875 and served in the Egyptian war of 1882 and was present at Kassassin and Tel-el-Kebir, mentioned in despatches and promoted to staff-surgeon. In 1891 he became fleet surgeon, in which rank he served in the ill-fated battleship *Victoria*, flagship of Vice-Admiral Sir George Tryon, which in 1893 was sunk off the Syrian coast. In August, 1899, he was promoted to deputy inspector-general and in February last to inspector general, the following month being appointed to Haslar Hospital. We heartily congratulate this officer on his appointment to the post of Director-General of the Medical Department of the Royal Navy and wish him all success in the discharge of his new and responsible duties.

SIR HENRY NORBURY, K.C.B.

Inspector-General Sir Henry F. Norbury, Director-General of the Medical Department, will shortly relinquish his appointment which he has held a little over six years. Sir Henry Norbury has served 44 years and has seen considerable active service in South Africa—in the Kaffir war, 1877–78, and in the Zulu war, 1879, on both occasions being mentioned in despatches. On the occasion of the Diamond Jubilee of the late Queen Victoria he was made K.C.B. Sir Henry Norbury is honorary surgeon to the King, a Knight of Grace of the Order of St. John of Jerusalem, a honorary Fellow of the Royal College of Surgeons of England, and the holder of Sir Gilbert Blane's gold medal.

SUPERSEDED OFFICERS A.M.S.

Under the above heading the *Army and Navy Gazette* of June 11th publishes a communication from a correspondent making inquiry into a matter which is stated to have been discussed freely and unfavourably in the medical service. It is as to whether the army medical officers on the Advisory Board at headquarters who happen to be junior in rank to the medical officers whose promotion comes up for consideration are allowed to sit and to vote at the Advisory Board meetings on the promotion of their seniors. If so, the correspondent points out that it is against the interests of discipline, seeing that these junior officers have benefited very materially by the supersession of their seniors, notably so in the

lieutenant-colonel's rank. To this inquiry our service contemporary replies in an editorial note which calls for attention on account of its important bearing. We venture, therefore, to quote it at length.

"Our correspondent asks us to reply to his query in some authoritative form. It is difficult for us to do so but we may commit ourselves to the following remarks. There seems to be no ruling that the Royal Army Medical Corps officers who are members of the Advisory Board and who happen to be *junior* in rank to the officers whose names come up for consideration for promotion by that Board should *not* take a part in its deliberations, but whether they actually *vote* is a matter on which we should like to know more. The point raised by our correspondent is giving rise to very unsettling comments which we refrain from disclosing. The proceedings of the Advisory Board are clearly open to unfavourable construction when we find examples of medical officers superseded on its recommendation and then subsequently promoted by the military authorities. In one case an officer was superseded for over a year and thus lost several places but was subsequently promoted by the military authorities, and not only promoted but restored to his proper position in the rank to which he was advanced. This officer's case is no secret, and if instances can be multiplied, as we are informed they can, then something defective would appear in the Advisory Board's deliberations. We would invite discussion."

THE EMPLOYMENT OF DISCHARGED SOLDIERS.

Under the presidency of the Lord Mayor of London the annual meeting of the National Association for the Employment of Discharged Soldiers was held at the Mansion House on June 13th. The Princess Louise (Duchess of Argyll) sent a letter expressing her sympathy with the work of the association and regretting her inability to attend the meeting. The report of the association stated that during the past 12 months 17,350 men had been registered and permanent employment found for 11,068. Many vacancies occurred in Government offices which warrant officers, non-commissioned officers, and men of good character were well-fitted to fill. The association continued to receive liberal financial assistance from the Government, which had made a further grant of £1500 during the past year, and the King, a life member, had again subscribed to the funds.

THE WAR IN THE FAR EAST.

There seems to be some doubt about the Japanese victory on the afternoon of June 11th, in which it is alleged that a strong detachment of the Russians was driven back in disorder on Kaichau with the loss of 860 killed and wounded. There is no allusion to such an occurrence in the Russian general's official report from Wafangko of that date. It is, of course, possible that the Japanese may have had such a success, but it must be expected that mere affairs of outposts will be constantly taking place with losses on one side or the other which become exaggerated into serious engagements. It is somewhat a matter of surprise that we do not hear more of the movement of the Japanese in the vicinity of Mukden and of the interruption of the railway to the north of that place. It is but natural to suppose that the Russians will be most unwilling to leave the beleaguered garrison of Port Arthur to its fate, but it may be accepted as certain that a general of Kuropatkin's great military experience and reputation is well acquainted with the difficulty and risk of making the attempt. At the moment of writing it is rumoured that a naval battle is going on, the Vladivostok fleet having escaped from port and made a dash for Port Arthur. As was the case with ourselves in South Africa charges of inhumanity have been made during the present war but there is every reason to believe that they are groundless and that as far as possible the wounded and prisoners, irrespectively of their nationality, have received every care and attention in the camps and hospitals; that much has, we are glad to say, been acknowledged on both sides. The military attachés to the Japanese forces from this country and the colonies are now in the field and Lieutenant-Colonel Macpherson, R.A.M.C., is with the headquarters of the 2nd Japanese Army. There is great activity in Moscow and elsewhere in Russia in the way of war preparations of all kinds and elaborate instructions have been issued for the prophylactic inoculation of men and animals under orders for the East against all sorts of diseases. The English Red Cross Society at St. Petersburg has sent a donation of £2000 to Sir Charles Hardinge, the British Ambassador, to be used at the discretion of his Excellency for the relief of the Russian sick and wounded. Sir Charles Hardinge has decided to hand the money over to the Dowager Czarina who is president of the Russian Red Cross Society.

The *Russki Listok*, in reply to many questions as to how to address letters to friends in the Far East, says that an information bureau has been established at Karbin which is kept fully informed of all the movements of the sanitary detachments. Therefore all communications should be addressed to Karbin.

The special correspondent of the *Novoe Vremya* at Karbin telegraphs that the hospital barge for the removal of the sick and wounded thence to Chabarovsk and Blagoveschtschensk has been consecrated. It is elegantly arranged and fitted. The streets of Karbin are being paved and, generally, since the energetic measures taken by the army officers and town council, the sanitary state of the town is quite satisfactory. The most serious problem is the sanitation of the neighbouring Chinese villages.

One of the largest and best of the hospital trains for the Far East is that provided by the Transcaucasian Railway employés and now in course of preparation. It consists of 41 third-class carriages containing 300 beds ranged in two tiers along the sides of the carriages with a wide passage in the centre. Besides the above there will be attached a wagon fitted as a kitchen and a dispensary wagon.

Correspondence.

"Audi alteram partem."

SHOULD MEDICAL MEN BE ALLOWED TO DISPENSE THEIR PRESCRIPTIONS OR NOT?

To the Editors of THE LANCET.

SIRS,—A short time ago a number of letters on this subject appeared in THE LANCET. As the question affects the public more than the profession perhaps the following case of my own may be to the point.

Last week I wanted some nitrite of amyl and sent a note by a friend of mine to a chemist in the nearest town (I live in a village) seven miles distant where there are three chemists, requesting him to send a few vaporoles or capsules, five minims, of amyl nitrite. Now comes the amusing part of the story. Mr. A had none, but "had something that would do as well." Perhaps Mr. B had some. My friend went to him; he had none, neither was the drug named in his list, being, as he told my friend, "only supplied to medical men," and he was perfectly certain that Mr. C did not keep such a preparation. I am not aware that there is any other drug that will act like nitrite of amyl in the disease for which it is usually prescribed. Perhaps you or some of your readers will enlighten my darkness on that point.

Again, some years ago I prescribed nepenthe (Ferris) for a patient in small doses. When he went to a chemist in the same town he told him that he did not keep it, that it was a very old "drug," and that there were several other preparations which acted much better. Now to me this sounds very much like substitution and that the chemist, without seeing the patient or knowing anything of his complaint, judges himself to be a far more competent person to prescribe than the medical man in attendance.

Some time ago, I think it was a Mr. Howel Idris who started the agitation against medical men dispensing for the reason that they sometimes made mistakes. Quite so; we are all liable to make mistakes at times, but that does not prove that we are necessarily rogues, and I maintain that a man who substitutes one drug for another, or suggests such a proceeding, is very little better than a rogue. I know for a fact that the majority of the middle- and lower-class public have more faith and place more reliance on medicine obtained from their attendant's surgery and what appeals to them a great deal more is that they get advice and medicine cheaper from a medical man than they do from a chemist, the prices charged by the latter gentry for anything in the shape of a prescription, if only half-a-dozen pills, being something exorbitant. I have frequently given prescriptions gratis to poor persons and on inquiry have been sorry to hear that the chemist has charged 3*s.* 6*d.* for an eight-ounce mixture and a few pills, the intrinsic value of the lot, bottle included, being at the outside 1*s.* Well, after reading this perhaps there are some persons who wish to prohibit medical men dispensing. If they will come forward and pay the

chemist's bill I am quite willing provided there is no substitution. I am, Sirs, yours faithfully,

Y. M. JONES-HUMPHREYS.

Cemmaes, Montgomeryshire, June 13th 1904.

THE SO-CALLED PANCREATIC REACTION IN THE URINE.

To the Editors of THE LANCET.

SIRS,—The contention of your correspondents, Dr. C. E. Ham and Dr. J. B. Cleland, that the pancreatic reaction is due to lead salts is at once disposed of by the fact that other acids and neutralising agents than hydrochloric acid and lead carbonate give precisely similar results to those I have described as being obtainable with these reagents. The operations are somewhat more tedious and require considerably more care, but using, for instance, half a cubic centimetre of sulphuric acid to the ten cubic centimetres of urine and, after boiling for five to ten minutes, neutralising with barium carbonate I obtained in over 50 consecutive cases typical crystals with pancreatic urines and no reaction with normal cases.

The pancreatic crystals are undoubted osazone crystals, as their melting points and other characters show, but I am not aware that I have ever stated that they are almost identical with phenylglucosazone—in fact, I pointed out at my lecture that they more closely resembled phenylmaltosazone in most instances. The method of removing lead from the solution by means of ammonium sulphide, with subsequent heating, adopted by Dr. Ham and Dr. Cleland introduces new factors into the operation which are calculated to interfere with the succeeding stages of the "A" reaction. It is to these that their failure to obtain crystals in the six pancreatic cases they have examined is no doubt due and not to the absence of lead, which, as I have pointed out above, does not influence the result one way or the other. The clinical diagnosis of diseases of the pancreas has not been my share of the work, but I have every confidence in the surgeons who supplied me with material for my investigations. The presence of cysts, pancreatic calculi, and gross obstructions of the common duct in a considerable proportion of the cases examined is sufficient to establish the clinical value of the test, which is at present all I seek to maintain.

Dr. F. G. Bushnell's detailed account of the case in which he had the opportunity of examining the urine during life and the organs after death, is interesting further evidence in favour of the diagnostic value of the reaction and an important contribution to our knowledge of the anatomical changes associated with the particular variety of the test he obtained. Crystals dissolving in one to two minutes by both the "A" and the "B" methods are quite what one would have expected with a pancreas showing much interlobular fibrosis (i.e., damage due to past chronic pancreatitis) and a history pointing to long-standing disease of that organ.

The stage of the inflammatory reaction appears to influence the result of the test and it is possible to gauge roughly the progress of the changes in the pancreas by the difference in the amount of the deposit yielded by the "A" and the "B" methods. The short yellow crystals occasionally met with in the control phenylhydrazin test are, in some cases at least, due to traces of a form of maltose but that this is always so I am not prepared to say.

I am, Sirs, yours faithfully,

Beaumont-street, W., June 13th, 1904. P. J. CAMMIDGE.

THE POWERS OF THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—Many of your readers may not have realised the importance of the recent decision of the General Medical Council to apply to Parliament for power to compel the names of all students of medicine to be entered on a register under its control. Such a power would be very far-reaching, since it must carry with it the right to refuse registration to the student of any university or licensing body which would not be prepared to modify its requirements in the precise way which the Council might choose to demand. The great services rendered by the Council are recognised by all members of the profession, but there can be little doubt that its present legal powers, taken together with the moral weight which it derives from the individual eminence of its members, are amply sufficient to effect the ends it has in view.

Already the Council claims to be possessed of such rights as the following: 1. The right to inspect any examination which forms a necessary part of the medical curriculum, including even the earlier examinations in literary and scientific subjects, and to *require* such changes in scope and method as they think fit, including even the adoption of a particular system of marking. 2. The power to require examining bodies to demand from a candidate before admitting him to examination evidence that he has gone through a particular course of study, lasting for a particular period of time, conducted in particular institutions approved by the Council, and taken at a particular stage in his career.

Attempts have been made by the Council to exercise each of the above-mentioned powers and it is apparently only the fact that its claim to possess them depends upon a doubtful interpretation of the Medical Acts of 1858 and 1886 which has hitherto prevented their enforcement. There is a widespread conviction among many of those concerned with medical education that, if these autocratic requirements indicate the spirit in which the Council conceives it to be its duty to act, any further increase of its power would be eminently undesirable.

I am, Sirs, yours faithfully,

W. RAMSDEN, M.D. Oxon.

Pembroke College, Oxford, June 13th, 1904.

THORNE DEFENCE FUND.

To the Editors of THE LANCET.

SIRS,—Every medical man engaged in surgical work must feel sympathy with Dr. Mary Thorne in the recent action which she has been called upon to defend and which resulted in an unfavourable verdict against her. Although the expenses of Dr. Thorne's defence were defrayed by the Medical Defence Union, of which she is a member, she is herself responsible for the damages awarded against her and also for the plaintiff's costs which together amount to about £250. It has therefore been decided to raise a fund to assist Dr. Thorne in meeting this expense and as a means of showing the practical sympathy of the medical profession with her. We are, Sirs, yours faithfully,

WALTER S. A. GRIFFITH.
WALTER TATE.
DOUGLAS DREW.

P.S.—Dr. Tate, of 32, Queen Anne-street, London, W., will be pleased to receive and to acknowledge any subscriptions to the fund. The following is the first list of subscribers:—

	£	s.	d.		£	s.	d.
Dr. C. J. Cullingworth	5	5	0	Sir William Broadbent, Bart.	2	2	0
Dr. Walter S. A. Griffith	5	5	0	Sir Victor Horsley... ...	2	2	0
Dr. Walter W. H. Tate...	5	5	0	Mrs. Elizabeth Wilks, M.D.	5	5	0
Mrs. E. Garrett Anderson, M.D.	5	5	0	Dr. Harrington Sainsbury...	3	3	0
Mrs. M. A. D. Scharlieb, M.D.	5	5	0	Mr. W. H. Battle	2	2	0
Mrs. Stanley Boyd, M.D.	5	5	0	Dr. Arthur F. Stabb ...	2	2	0
Dr. Herbert R. Spencer	3	3	0	Mr. A. W. Mayo Robson	1	1	0
Mr. Douglas Drew ...	2	2	0	A Friend	1	1	0
Mr. J. Berry	2	2	0	Dr. Maynard Horne ...	1	1	0
Mrs. F. M. Dickinson Berry, M.D.	1	1	0	Dr. H. J. Scharlieb ...	1	1	0
Dr. Amand J. M. Routh	2	2	0	Miss M. E. S. Scharlieb	1	1	0
Mr. Stanley Boyd	1	1	0	Dr. G. E. Herman... ...	2	2	0

ABSCESS OF THE FRONTAL SINUS.

To the Editors of THE LANCET.

SIRS,—I am surprised to see that Dr. R. S. Wainewright in his letter to THE LANCET of June 11th, p. 1687, referring to the external swelling caused by perforation of a frontal sinus empyema, says that he cannot find it mentioned in any book. The reason why this swelling is not accorded a prominent place as a symptom by nasal specialists is that they generally diagnose empyema of the frontal sinus at a stage considerably earlier than that of external swelling and cases accompanied by swelling usually come into the hands of the ophthalmic or the general surgeon. In spite of this, among the books I happen to have within reach this condition is referred to in "Diseases of the Upper Respiratory Tract," by Watson Williams, fourth edition, pp. 379 and 380; "Manual of Surgical Treatment," by Cheyne and Burghard (Lambert Lack's article), part v., p. 339; Heath's "Dictionary of Practical Surgery," and Sheild's article in Treves's "System of Surgery," vol. ii., p. 348. A very complete account of its causation, position,

and appearance, with an illustration, may be found in Hajek's work on the "Inflammatory Diseases of the Accessory Sinuses of the Nose," pp. 135 and 145. After reading these descriptions I trust that Dr. Wainewright will no longer assert that "even the greatest nasal specialists seem still to be entirely ignorant as to its nature." I may point out that a clear distinction should be made between the swelling due to expansion of the bone by the rare mucocele and that caused by an abscess after perforation of an empyema which hardly ever expands the bone.

Dr. Wainewright further says of these cases that "all that is necessary to do is to make an incision through the swelling and pass a drainage-tube into the cavity of the nose." Now this is by no means so simple as it sounds; the opening into the nose is normally much too small to admit a drainage-tube and is always much narrowed in these cases which go on to perforation; further, the perforation is usually too small to work through and must be enlarged. These cases are severe and there are often present areas of caries and polypoid degeneration as well as associated disease of the ethmoidal cells, all of which must be treated if a cure is hoped for. It is a pity that such simple methods as Dr. Wainewright mentions are not usually sufficient but experience shows that they seldom are. The question of complete obliteration of the cavity is too long to discuss here, but there is much to be said in favour of this procedure in certain advanced cases. At least, we cannot dismiss it as shortly as Dr. Wainewright does from among our means of treating a class of case often exceedingly difficult to bring to a complete and final cure.

I am, Sirs, yours faithfully,

Wimpole street, June 14th, 1904. HAROLD BARWELL.

COUNTING MATTRESS SPONGES IN ABDOMINAL OPERATIONS.

To the Editors of THE LANCET.

SIRS,—A simple method of preventing mattress sponges being left behind in abdominal operations is to have a piece of tape sewn to one corner of the sponge. The tape should be about a foot long so that when the sponge is introduced into the abdomen the tape hangs outside over the edge of the wound on the abdominal wall. To keep it taut a leaden bead or button may be strung on to the end of the tape and secured by a knot. The beads or buttons—the button being flat is the better of the two—can be readily sterilised and, of course, used again and again. As there is a tape outside for every sponge inside all that it is necessary to do before the wound is stitched up is to count the tapes, to find if they tally, and then to draw out the sponges by pulling each tape separately. The method, I think, is used in Dublin.

I am, Sirs, yours faithfully,

June 11th, 1904. J. JOHNSTON ABRAHAM.

SPLENIC ANÆMIA.

To the Editors of THE LANCET.

SIRS,—The following case of mine suggests whether it is not the removal of the spleen (as stated by Dr. F. Taylor in the Lumleian lectures) which relieves in splenic anæmia but the excessive loss of blood which takes place in such an operation, and whether bleeding *to an extreme degree* is not indicated as a method of treatment in splenic anæmia both to give an impetus to the blood-forming organs and to get rid of a poison inhibiting the action of those organs. A tin miner aged about 30 years, consulted me for extreme anæmia with enlarged spleen. No blood count was made. He failed to improve under iron and increasing doses of arsenic until he had a violent attack of epistaxis which nearly cost him his life, after which with the same treatment he completely recovered to all appearances, regained his colour, and went to America to mine where he was well and working three years afterwards. I cannot remember the after state of the spleen definitely.

I am, Sirs, yours faithfully,

Camborne, Cornwall, June 11th, 1904. JOHN H. TONKING.

RESPECT FOR DRUGS.

To the Editors of THE LANCET.

SIRS,—My attention has been called to the review of my work on "Drugs" which appeared in THE LANCET of May 14th, p. 1358. Whilst thanking you for the space you have given to a notice of my book and your reviewer for pointing out several slips which have evaded the vigilance of the proof-readers I cannot but think that your contributor is hypercritical in some of his comments. He objects to the statement that "all drugs are poisons," not that he disputes its truth but because he fears it may be used to throw doubt on the value of medical science. Is it not equally probable that it may help to hinder the habit of self-drugging which is so fatally fashionable? Personally I have always found it essential to impress students with a proper respect for the drugs they handle. Your reviewer does not like the system of classification I have adopted. It has its drawbacks undoubtedly, in common with every other known system, but as students have to recognise specimens it would seem well that they should consider those that are alike in external characters together—e.g., leaves with leaves and roots with roots.

May I hope that the comparative triviality of the errors and misprints which your contributor has noted indicates the absence of serious faults?

I am, Sirs, yours faithfully,

June 10th, 1904. H. WIPPELL GADD.

TAPEWORM IN A CHILD.

To the Editors of THE LANCET.

SIRS,—*Apropos* of Dr. J. A. Rigby's case of tapeworm in a child, aged 34 months, published in THE LANCET of May 14th, p. 1348, I beg to enclose a reprint of a report of a somewhat similar case in a child, aged 24 months, observed by me some three years ago.

The case was reported to the Philadelphia Pediatric Society not only as an instance of infection at a very tender age but principally to point out the danger of giving raw beef to young children—a custom quite prevalent at present in the United States and for which L. Emmet Holt is largely responsible. A tapeworm is not a desirable guest for a young child to entertain; indeed, its presence is not altogether devoid of danger, while its removal is often a matter of extreme difficulty. For this reason it would seem to be the part of wisdom to reserve the use of raw beef for those extreme cases of dyspepsia in which the proteids of cow's milk, however altered or modified, are digested with great difficulty and for the treatment of certain cases of chronic diarrhœa.

I am, Sirs, yours faithfully,

Philadelphia, U.S.A., June 1st, 1904. D. J. M. MILLER.

THE IMPURE AIR OF CHURCHES.

To the Editors of THE LANCET.

SIRS,—During the last two years I have visited during service more than 100 churches in the South of England, both in towns and country. In these days when "open-air treatment" and the merits of the open window are preached it is remarkable how the churches fail to keep pace with the times and keep their windows rigorously shut. Many country churches have no windows that will open or other means of ventilation; in others the very small and few windows made to open are kept closed. The churches in so-called health resorts are the worst offenders. They have large congregations, many services, and little ventilation. In winter artificial heating by hot-water pipes is common, and in the evening the lighting is by gas or oil lamps, and occasionally by electric light. The air at the end of a crowded service is foul beyond description. Not 5 per cent. of the churches which I have seen have any proper ventilation except the newer ones which have apertures or windows high up near the roof and other windows not hermetically closed. In the vast majority week after week the foul and stagnant air is never renewed; the dust and numerous germs, pathological and otherwise, remain year after year in the crevices of antique wood or stone work. One sees occasionally sufferers with the streaming eyes and nose of cold or influenza; one hears the cough of phthisis or pertussis. The writer has known several cases of illness directly due to visits to these malodorous and unwholesome services and many of my medical brethren could confirm this. Of course the subject is a delicate one. Some of my clerical friends readily admit the bad air of the churches but hesitate to oppose the ignorant prejudices of many worshippers and their pious horror of so-called draughts. Those I visited belonged to the Church of England. Those of other sects, so far as I can learn,

are not better ventilated. In this respect, notwithstanding our boasted progress in sanitary science, the churches retain the customs of the Middle Ages. Perhaps, Sirs, you may deem the matter of sufficient importance to give this letter a place in your columns.

I am, Sirs, yours faithfully,

T. CARSON FISHER, M.D. Dub.

Paignton, Devon, June 13th, 1904.

THE FOLKESTONE PUBLIC HEALTH CONGRESS AND THE SANDGATE SCANDAL.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Continued from p. 1690.)

SANATORIUMS FOR PULMONARY TUBERCULOSIS: RESULTS OF THE EXAMPLE GIVEN BY THE GERMAN EMPIRE.

DEALING with the general question of sanatoriums for the treatment of pulmonary tuberculosis, it may first of all be observed that in any case there is less need for such institutions in England than in the other European countries. Dr. Brouardel, one of the reporters on the question, reminded the International Congress of Hygiene that in 1899 the deaths from pulmonary phthisis per 10,000 inhabitants amounted to 40 in Russia, 36 in Austria, 30 in France, 22 in Germany, 20 in Switzerland, Ireland, and Denmark, 18 in Holland and Italy, 17 in Belgium, Norway, and Sweden, and only 13 in England. On all sides great homage was rendered to what had been done in England, for it is well known that formerly the death-rate from this cause was as high in England as it was on the continent. It is therefore, and at the onset, somewhat of a stumbling-block in the study of the question of sanatoriums to find that the best results have been obtained in the country where such institutions can hardly be said to exist. On the other hand, and speaking in a general and broad sense, it can also be said that the second best results have been obtained precisely in that country where the movement in favour of sanatoriums has received its greatest development; indeed, it is from Germany that the impulse in favour of sanatoriums has come. Such places as Davos in Switzerland and Hyères or Mentone in the south of France suggested that there was perhaps a means of cure or of improvement available for a few well-to-do or wealthy persons; but it is to Germany mainly that we owe the conception and the practical demonstration that these advantages can be placed at the disposal of the toiling masses. This, of course, arises from that giant measure of constructive social reform—universal and compulsory insurance for all whose income does not exceed £100 a year. It is well known that this law imposes a threefold obligation. Every individual must insure against sickness, against accident, and against incapacity to work or old age. The premium paid is calculated at 1½ per cent. of the annual wage or salary earned. The employer pays one-third of this sum and deducts the other two-thirds from the wages and he is responsible for the transmission of the total amount to the right bank or fund. At present, however, the purport in view relates only to the connexion existing between the system of compulsory insurance and the sanatoriums, therefore it is not necessary to describe the law in detail. Indeed, these details are of such vast importance in their bearing on public health as well as on economical conditions that they should be familiar to all students of these questions. It is not, therefore, necessary to deal with the modification of the law on accidents raising the maximum income of the insured from £100 to £150 only in so far that it all means in practice the prevention of extreme poverty. Neither the victim of the accident nor his family can be reduced to destitution. Provision has been made for them that will in any case prevent absolute want.

The question to be considered in this respect is whether this practical "extinction of pauperism" has not done far more for the reduction of pulmonary tuberculosis than the creation of sanatoriums. Dr. Santoliquido, who is the Director-General of the sanitary services of the kingdom of Italy, was charged by his government to study and to report on this subject, and he concludes that it is the compulsory insurance and not the provision of sanatoriums that has done most in the reduction of tuberculosis.

The portion of the law that relates to insurance against old age and the incapacity to work has the more direct bearing on the questions of sanatoriums. According to Article 18 of the law of July 13th, 1889, the relief given may consist of medical treatment, medicaments, food, and gratuitous nursing in hospitals, sanatoriums, and similar institutions. Here, then, we have not only the legal sanction for sanatoriums but a fund to provide the means. Then, again, we have here the power of applying a principle that can hardly be said to exist elsewhere. The law sanctions the application of preventive treatment. All being insured and called upon to pay for each person who is invalided it is to everyone's advantage to prevent illness. The whole community then becomes as members of one single family and everyone is personally interested in preventing others from falling ill. It is in this spirit that the German sanatoriums for the treatment of pulmonary tuberculosis must be considered. It is quite as important to prevent a case of tuberculosis as to cure a case that already exists. The object in view is to reduce the number of persons entitled to sick relief. No sooner had insurance to provide pensions for the invalided been rendered compulsory than it was found that those who created the greatest drain on the funds were those who were suffering from tuberculosis. When the law had only been in existence six years it was ascertained that out of 60,000 invalids receiving pensions 8500 were suffering from tuberculosis. As this illness lasts a very long time it constitutes a very serious charge on insurance funds. Indeed, it became a moot point whether the funds would suffice in spite of the compulsory payments. Consequently the question was not merely how to cure tuberculosis and how to prevent the spread of the disease, there was also the desire to put the patient on his feet again and to enable him to return to work, if only for a short time. The preventive treatment of tuberculosis was therefore advocated, not only as a humane measure but as a sound financial investment.

The first State sanatoriums for tuberculosis were built in 1892. There were only seven sanatoriums constructed during the first four years, holding altogether 634 beds. After that the movement spread much more rapidly and by the end of 1902 there were 60 sanatoriums with 5012 beds. So far back as 1854 a sanatorium with 300 beds had been built by private enterprise; then nothing more was done till 1873 when another private sanatorium was opened. Altogether there were 16 private sanatoriums, with 1771 beds, in 1901. During that year 18,525 patients underwent the special treatment for tuberculosis in these establishments. It is estimated by some authorities that this year the number of patients thus treated throughout the German Empire will not fall short of 25,000. This, then, has been a gigantic experiment and the results should be sufficient to be taken as a basis for action. The fact is that while the general mortality has not of late decreased very much, that from tuberculosis, which from 1876 to 1886 was 31 per 10,000 inhabitants, fell to 21 per 10,000 in 1901. But it is important to note that whereas the reduction amounted to an annual average of 0·99 per 10,000 inhabitants from 1886 to 1893 it was only equal to an annual average of 0·55 per 10,000 from 1894 to 1900. The building of sanatoriums began in 1892–93 and there were but few built at first, so that the great reduction in the prevalence of tuberculosis preceded and did not coincide with the building of sanatoriums. Still as the reduction in the disease continued after the building of the sanatoriums, though not in so marked a degree, it would be an exaggeration on the opposite side of the argument to say that they have been of no use whatsoever. Particularly would such an argument be inappropriate if the financial aspects of the problem is taken into consideration. The object is to prevent or to defer the day when the worker shall be so ill as to have a claim upon the insurance funds. If without saving life the sanatoriums can increase the working efficacy of the population they have served a useful purpose. The sanatorium is not a hospital founded for the purpose of curing patients. Its object is to reduce the drain on the insurance funds by taking cases early in the development of the disease and when there is a good prospect of restoring them and of preventing their becoming confirmed invalids.

To attain such results economy would be a mistaken policy, so that not only must the best site and climatic conditions available be selected for the sanatorium but the patients must have ample and the best food. In these circumstances it has been found that the average cost for a patient's maintenance is 4*s.* a day. As the treatment on an

average lasts 73 days the cost for maintenance per patient should amount to £14 12*s*. The principle is that this expense is not to be incurred unless there is a reasonable chance of enabling the patient to return to work. In a word, the sanatorium is an annex to the system of insurance. It is not a charity or a hospital or even a prophylactic institution, though incidentally it sometimes serves for all these three purposes, but that is not its mission. As for the results obtained, the German Imperial Bureau of Hygiene publishes statistics in regard to 6000 patients extending over the period of 1896 to 1901. It would appear that when they had completed the treatment given in the sanatoriums 67·3 per cent. were able to resume their former occupations, 7·1 per cent. were also able to work but at some lighter task, 14·6 per cent. could only do a little work, and 11 per cent. were incapable of any effort. As for the duration of the improvement, of those treated in 1897 there were 44 per cent. who had retained the full benefit during the following year, 30 per cent. in 1899, 30 per cent. in 1900, and 27 per cent. in 1901. Thus at the end of four years of the 67 per cent. of patients who on leaving the sanatoriums were said to be cured, only 27 per cent. were still well enough to earn their living at their own trades. This does not even mean that the 27 per cent. are cured from the medical point of view; they are only cured from the economic point of view. Indeed, the term "economic cure" has now become a part of the phraseology created by this problem. It does not mean that the patient has been cheaply cured but that he is so far cured that he can return to work and once more earn his living. Therefore, it is necessary to reduce very considerably the figure of 27 per cent. before the proportion of patients definitely and permanently cured can be ascertained. When this has been done it is questionable whether the proportion will be much higher than that which occurs in ordinary practice and in the usual course of nature.

The next question that arises is whether death, if not prevented, has at least been postponed. Professor Paul Jacob, of the University of Berlin, stated at the Brussels International Congress of Hygiene that the results obtained in Germany justified the vast expenditure which had been incurred. He claimed that nearly 30,000 patients were treated annually in the German sanatoriums and that 7000, or from 25 to 30 per cent., were completely cured. It was no small matter to restore to health and activity 7000 persons annually, the greater part of whom were workers and on whose labour whole families depended. A much larger number of patients were benefited but fell ill again after a certain lapse of time. This, however, was due not so much to the inefficiency of the treatment which they had received at the sanatoriums but rather to the want of treatment after they left the sanatoriums, to the misery, the overcrowding, and the poverty of the homes to which they returned, or else to the dust and the unwholesomeness of the factories and the trades at which they worked. By improving the conditions of life of the patients after they left the sanatoriums much more permanent benefits would accrue. As for the cost, that should be a secondary consideration. However, it was claimed that the sanatoriums of Germany annually and permanently restored to their occupations 7000 workers and prolonged at least for two years the working capacity and life of some 20,000 other persons. President Koehler of the *Kaiserliches Gesundheitsamt* of Berlin calculated that if the lives of 16,000 men can be prolonged for three years, this means an annual augmentation of the public wealth equal to £1,000,000. As against this benefit the cost of nursing some 30,000 persons for an average of three months each in a sanatorium represents but a small outlay. Then there is also the prophylactic advantage of treating 30,000 patients in special establishments where they cannot infect the general population. At the German Imperial Sanitary Office it has been calculated that if 12,000 patients are treated in sanatoriums and 9000 of them are returned to the community and their lives so prolonged that they are able to perform on an average three years' work, the net profit to the community after all expenses have been paid would amount to £375,000 per annum. At the same time many families would also be saved from much poverty and misery.

The most trustworthy statistics, however, are those that relate to some vast enterprise which employs and can watch constantly a large number of people. The Prussian State railways meet these requirements admirably. Here 240,000 workmen are employed and insured against accidents, illness, old age, or incapacity. Since the year 1898 whenever any of these workmen manifest symptoms of tuberculosis they are at once sent to a sanatorium. As soon as they are well enough they return to their work and are always carefully examined at least once a year by their medical officers. By these means full and accurate statistics have been secured of the immediate and the after results of the treatment. But such treatment is not limited to time. Quite a considerable number are obliged to remain in the sanatorium for more than a year and some stay for several years. By such means as many as 80 per cent., sometimes 90 per cent., have been able to return to their work after remaining a year or more at the sanatorium. The longer the stay the more desperate the case, and therefore the proportion of those who can return to their work decreases. Thus the proportions are after two years 64 per cent., after three years 55 per cent., after four years 50 per cent., and after five years 48 per cent. Dr. Grünberg of the Prussian State railways claims that these are durable results and much more favourable than those put to the credit of the ordinary sanatoriums. But then the whole administration of the State railways helps the patients. Thus, when a workman leaves the sanatorium he is given at first only light work till such time as his strength is thoroughly restored. During his absence in the sanatorium his cure has not been impeded by anxiety about his home. There are funds organised to provide for his family. Then the administration of the State railways has spent £550,000 to insure the perfect sanitary condition of the houses in which the railway servants live. By this combination of efforts many lives have been saved and prolonged and the money expended has been advantageously laid out.

It is such examples as these that have encouraged other bodies to spend more freely. The Imperial Office on Assurances published statistics showing that up to 1899 the number of pensions allotted to persons who were invalided amounted to 315,099. From one-eighth to one-tenth of these pensions were given to persons suffering from tuberculosis. The loss which this implies is rendered more serious because of the age of the persons invalided. Out of 10,000 cases 549 men and 426 women were from 20 to 24 years old, 509 men and 343 women were from 25 to 29 years old, and 439 men and 258 women were from 30 to 34 years old. These are just the ages when most persons are best able to earn good wages and to pay into, rather than to draw from, the insurance fund. Of the urban workmen who become invalids before they are 35 years old half are cases of tuberculosis. Considering the great loss entailed when such young persons are struck down by sickness the tendency is not to spare expense in seeking to prevent this evil. The average cost per patient has increased from £14 12*s*. to £17 3*s*. 6*d*. in 1901 and to £17 15*s*. 4*d*. in 1902. But it is claimed that the number of those who are still capable of working four years after they have left the sanatoriums has increased in 1901 from 27 to 31 per cent. among the men and from 25 to 28 per cent. among the women.

Such are some of the principal facts that can be deduced from the vast State enterprise by which the German Empire has endeavoured to cope with the evil. It does seem like a descent from the sublime to the ridiculous to compare such a gigantic undertaking with the pigmy efforts of an individual speculator who pretended to organise sanatoriums for the treatment of tuberculosis at Sandgate. To begin with, there are no statistics whatsoever to show what happens to the patients after they leave Sandgate and how many have survived the ordeal. Then, it has been seen, the German experience, which extends over some 30,000 patients annually, is to the effect that on an average the patient costs 4*s*. a day. Now that more is being spent it would probably be nearer the truth to estimate this outlay at 30*s*. instead of 28*s*. per week, or from £75 to £78 per annum per patient. If the capital expenditure is £200 per bed, then from £8 to £12 per annum must be added for interest on capital and a sinking fund to repay the loan. Also, there should be a further allowance for depreciation. Therefore the total annual expenditure cannot be very far short of £100 a year per patient and this, of course, makes no allowance for any profit whatsoever. But at Sandgate profit is the sole object, not profit for the funds of a national insurance, not profit for the national income and therefore a benefit to the whole community, but simply profit for individuals. To make a profit and yet to treat the patients as they are treated in Germany means that more than £100 should be paid annually for them. But the late J. J. Jones so organised matters as to make a profit out of a guinea a week. Yet the figures based on the vast experience acquired

throughout the German Empire prove conclusively and mathematically that it is not possible to give at Sandgate for £54 12s. per annum a treatment which can for one moment be compared with what is done for the working classes of the German Empire. Germany is not so rich a country as England but in this respect the industrial classes are better provided for and are not left to be exploited by individual speculators. The experience of other nations in the treatment of tuberculosis in sanatoriums, though not acquired on so extensive a scale as in Germany, also bears on the subject, and it would be difficult to find anywhere such a scandal as that which has arisen at Sandgate.

(To be continued.)

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Asylums for Lunatics in Bengal.—The Accident to the Amir.—The Control of Waterworks in Bengal.—The Plague Epidemic.—Vaccination in Afghanistan.

A RECENT Government resolution admits that the arrangements at the asylums are in many respects below the standard of the present day and that there is an absence of the skilled supervision which can be obtained only by the continuous presence of a highly trained specialist. To render it possible to provide such treatment at a reasonable cost concentration of patients is necessary, and this has of late years become practicable because almost all districts are now accessible by railway. The Government resolution refers to the possibility of concentrating European lunatics with the same object. The capacity of the asylums in Bengal during last year was 1188 and the daily average number of inmates was 1053·7. The average number of inmates per 1000 of the population was 0·01, as compared with 0·05 in Bombay and Burmah. The number discharged as cured was 96·44 per 1000—a proportion which evidently requires some explanation. In native lunatic asylums the question of diet is the all-absorbing one. For the five years ending 1892 the average cost per patient for diet was Rs. 33 13 0 (about £2 5s.) per annum, but for last year (1903) it was Rs. 47 11 6. It will be interesting to asylum managers to learn that the average total cost per patient in Bengal is Rs. 130 (about £8).

It is reported that the operation which Major R. Bird, I.M.S., performed on the Amir of Afghanistan the day after his arrival in Cabul was the opening of an abscess which had formed in the palm of his hand. Great pain had been previously suffered and there had been persistent sleeplessness. The native hakims rely upon oils and ointments where wounds are in question but unfortunately in this case the bone of one of the fingers was broken and blood poisoning was imminent. During the reign of the late Amir Dr. J. A Gray was stationed in the country but no successor has been appointed.

Some new rules for the management of waterworks under the supervision of the Government of Bengal have been recently promulgated which will take their control to a great extent away from the municipal commissioners and place it under a waterworks committee consisting of the district magistrate, the civil surgeon, the district engineer, and the chairman of the municipality. This is as it should be and it would be a great improvement if all sanitary matters were controlled by a similar body. The municipal bodies of Indian towns may be looked upon as primary schools for adults in municipal administration and the elements of sanitation, but unfortunately the pupils are not apt and the attendance is very deficient. The chief evil consists in their having power, so that as the pockets of the commissioners are liable to be affected by any improvements progress has to be forced upon these bodies from outside. These new rules concern the collection of rates as well as the general control of the water-supply. I am glad to say that the efficiency of sand filters is to be reported upon regularly and that the rules for working them are to be observed.

The mortality from plague, while declining rapidly in most of the affected provinces, still keeps very high in the Punjab. In this administration no less than 30,723 deaths were recorded for last week, while 35,413 was the total for the whole of India. This death-roll compares very unfavourably with the corresponding week of 1903 when 15,408 deaths were reported. Other figures for last week published are: United Provinces, 1300 deaths as against 2229 in the previous week; Bombay Presidency, 1621, as against 2325; Bengal, 261, as against 572; Kashmir, 221, as against 313; and Bombay city 265, as against 373. Calcutta returned 134 deaths. Cholera has been very prevalent in the latter city for months past but the plague outbreak this season has been comparatively mild.

Vaccination in Afghanistan is another matter in which its ruler has to obtain assistance from India. During the late Amir's reign a regular supply of lymph used to be furnished but for some unknown reason it was stopped. Now, however, it appears that the sardars and their families ask for it and a quantity of vaccine is to be forwarded annually to Cabul. The medical assistance rendered to the Amir and his people should increase the good feeling towards the British Government.

May 26th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

General Hospital: Resignation of Dr. Edwin Rickards.

IN 1870 the committee of the General Hospital decided to create the post of resident registrar and pathologist. It was a somewhat singular, not to say composite, appointment, for the holder, in addition to performing the post-mortem examinations and making reports on urines, &c., had to draw up for the annual report the tables of cases treated, a very arduous task, and also, strange as it may seem in these days, to administer all the anæsthetics. The latter duties have long passed into other hands but such were the conditions of the post when Dr. Rickards became its first occupant. From this position he passed to that of resident medical officer and in 1874 he was elected physician, his appointment being in addition to those previously in existence, thus raising the number of physicians at the time to five. This increase in the staff was agreed to on account of the great addition to the number of out-patients which took place at the time. Shortly afterwards, however, it was decided that it would be better to meet the difficulty by the appointment of assistant physicians and surgeons and the number of physicians was reduced at the first opportunity to four, as it is at the present time. When Sir Willoughby Wade retired in 1892 Dr. Rickards became senior physician. Dr. Rickards's connexion with the hospital has thus extended over 34 years and for 30 of those years he has been a member of the senior staff. So long a period of service has rarely been known in the annals of the General Hospital and under the new laws regulating retirements is most unlikely to occur again. Dr. Rickards is a graduate in arts and medicine of the University of Oxford and a Fellow both of the Royal College of Physicians of London and of the Royal College of Surgeons of England. He is a member of the Council of the University of Birmingham, in the medical school of which he has always taken a great interest. The present pathological laboratory was built at his expense and in part equipped by him. On receiving his resignation the board of management of the hospital passed the following resolution:—

> That the board of management have received with great regret the resignation of Dr. Edwin Rickards, senior honorary physician, and desire to record their high appreciation of the very able and courteous manner in which he has discharged his duties as honorary physician for the past 30 years; also of the great skill and attention he has devoted to the patients under his care and to the interest he has taken in the welfare of the institution.

It was also resolved that a recommendation should be laid before the next meeting of governors calling upon them to appoint Dr. Rickards a consulting physician to the hospital in consideration of the eminent services which he had rendered to the institution during his long tenure of office. A committee has also been formed to raise a fund for the foundation of some memorial of Dr. Rickards's services to the hospital and also to show the appreciation by the subscribers of his many excellent qualities. Dr. Rickards carries with him the good wishes of all those who have in any way had to do with him and the earnest hope that he may be spared for many years' further connexion with the profession of which he has been for so long an honourable and an honoured member. By this resignation Dr. Robert Saundby becomes senior physician and a vacancy on the senior staff occurs which will shortly be filled up. As a general rule such vacancies have fallen to one or other of the

holders of assistant posts. The present occupants of these positions are Dr. T. S. Short and Dr. James W. Russell.

University Notes.

When the University was founded it was felt that some opportunity of becoming graduates should be afforded to past students should they so desire. An ordinance was therefore passed permitting registered practitioners who had taken out the entire of their course in the Birmingham Medical School to proceed to the degrees of M.B. and Ch.B. by passing a final examination. This privilege has been taken advantage of by a number of past students who have submitted themselves to the very stringent examination which they have been required to face. It was thought better to limit this privilege to a certain period and not to allow it to be prolonged indefinitely, and, in the first instance, five years was laid down as the limit. The fourth examination will be held in a few days, so that under this regulation next year would have been the last in which it would have been possible for a past student to obtain his degree in the manner indicated. The council of the University has, however, recently decided to extend this period by two further years, making seven in all, so that 1907 will be the last year in which an examination for past students will be held.—Owing to his appointment as inspector under the General Medical Council and the fact that the examination at one of the universities which he has to visit takes place at the same time as the final examination in Birmingham Mr. Thomas Bryant has been obliged to resign his position as external examiner in surgery. He has been replaced by Mr. Howard Marsh, professor of surgery in the University of Cambridge.—Mr. Priestley Smith has been elected an honorary member of the Gesellschaft der Aerzte of Vienna, an honour which will be highly appreciated by his many friends and former pupils.

Outbreak of Ophthalmia in Staveley.

A serious outbreak of ophthalmia has taken place in Staveley, a place in the county of Derby. It has been investigated by Dr H. Peck, district medical officer, and Dr. Sidney Barwise, county medical officer. Mr. S. Snell of Sheffield has also made a report upon the epidemic, in which he states that it is not an outside estimate to say that 200 children and parents have been affected by the disease during the last two months. It is a very contagious disease, but it is rare for it to affect such large numbers as in the present instance. It is attended by a thick discharge and the smallest particle reaching an eye would affect it. Fortunately many cases were recovering but in others the sight might be affected. Means for preventing the contagion spreading must be adopted in the first instance and it would not be necessary for the schools to be closed.

Scarlet Fever in Wolverhampton

Dr. Henry Malet, medical officer of health of Wolverhampton, in his last quarterly report on the health of that town, states that though there has been some reduction in the scarlet fever returns they are still above the average. Of the 60 East end cases 52 were removed to the borough hospital. Two of these were fatal cases and of the eight cases treated at home three had a fatal termination. Of the 63 West end cases 50 were removed to the borough hospital, the rest being treated at home. Amongst this group there were no deaths. During the quarter the sources of infection were traceable in more cases than usual and some of the instances brought to light show how much carelessness is responsible for the spread of this disease. In one case the son of a family resident in Wolverhampton was taken ill in a town where there was no isolation hospital. His mother went and nursed him for a time and then returning home was replaced by one of the boy's sisters. After the mother's return two more of her children contracted the disease. A child was taken ill in a house where there was a children's party and was actually allowed to lie on a sofa during the party. The next day the illness proved to be scarlet fever and subsequently three of the visitors at the party developed that disease. Through a letter of complaint from a neighbour a child was ascertained to be going about in a state of free desquamation. Several cases, the origin of which had previously been obscure, were explained by contact with this child. One of the most instructive instances was the discovery of the fact that six different cases of the disease were traceable to a common milk-supply from a house outside the borough in which, on inquiry, it turned out that two cases of scarlet fever were being treated.

June 14th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Cripples.

A HOME for cripples, the "Bethesda" Home at Cheetham Hill, a branch of the "Central Refuge," Strangeways, was established in 1889 and has since that time been supported by Manchester citizens. It has 35 beds and during the 15 years of its existence has received hundreds of poor deformed and often incurable children from the most wretched surroundings. A new wing, to be opened in the autumn, is now being erected, where there will be 70 beds available. The extension will cost £4000 and, of course, any help will be gratefully accepted. There are other societies for helping cripples which have worked independently of each other, but in November last the "Cripples' Aid Federation" (Manchester and Salford) was formed to which are affiliated the "Crippled Children's Help Society," the "Cripples' Guild," the "Bethesda Home for Crippled Children," and the "Santa Fina" work of the Manchester Art Museum and University Settlement. The objects of the federation are to enable societies and individuals in Manchester and Salford to confer together and to coöperate in ways which may supplement existing work, such as (1) the prevention of overlapping; (2) the provision (directly or indirectly) of further medical or surgical aid, an employment bureau, a home for adult cripples, special schools, and such other things as may seem to the council necessary; and (3) the collection of information as to the causes of physical disablement and coöperation with other bodies and individuals in efforts to remove those causes. This federation is not as yet well known in Manchester but its objects are so good that it is to be hoped it will meet with encouragement and success. Its headquarters are at 104, King-street.

Home Treatment of Scarlet Fever.

In his annual report Mr. A. W. Martin, medical officer of health of the outer district of Gorton, states that long experience proves that scarlet fever can be dealt with at home with better results to the community than when treated in isolation hospitals. During the five years ended in 1902 the cases removed to hospital from Gorton were 10 per cent. of the total number notified, while the attack-rate was 3·3 per 1000 of the population. This is less than the attack-rate in those towns which remove from 50 to 80 per cent. of their cases, as their average varies from 3·45 to 4·47, agreeing with the statements of Mr. E. D. Marriott of Nottingham and Dr. C. Killick Millard of Leicester. Mr. Martin says that since the year 1870 each decade has seen a decline in the severity and fatality of scarlet fever "till at the present time it is certainly not worth the tremendous expense of hospital isolation." Without speaking positively he thinks the change is "due to the alterations produced in school life by increased ventilation and less overcrowding, with the passing of the Board School Act. Scarlet fever, along with measles and whooping-cough, is essentially a school-age disease."

"The Rushing Motor-Cars."

Several of the districts round Manchester are beginning to chafe under the tyranny of the motor-car. The Cheadle and Gatley council last week passed a motion proposing that the county council should be asked to grant the eight mile speed limit to the district. At Wilmslow a speed of eight miles an hour has been decided on. At Hazel Grove the same subject was discussed, one member of the council saying that "added to the public danger these cars in their rapid progress caused great inconvenience during the summer to shopkeepers along the lines of route by raising great quantities of dust." The inconvenience from the clouds of dust affects others as well as the shopkeepers. In many places the gardens along the roads are scarcely bearable from the dust and evil smells coming from the cars, while in some districts strawberries in fields adjoining the roads are so spoiled by the dust as to be unmarketable. The high roads, and often enough the by-lanes, are not only made less agreeable for people who wish to walk, to ride, or to drive along, but they are more dangerous than before the advent of the motor-car, and the state of constant dread, the fear of being run over and killed, is so real that many timid people dare scarcely venture from their own doors. Of course, this state of things need not be and is due to the reckless selfishness or thoughtlessness of the vulgar whose manners and customs

are imitated, unfortunately, with more or less success by some who ought to know better. If the craze for dangerously rapid driving along public roads does not die out spontaneously its end may have to be hastened by the authorities.

Measles in Didsbury.

The schools in Didsbury have been closed for some weeks in consequence of the prevalence of measles, 125 cases of which were reported during last month. There were also 14 cases of scarlet fever, two of diphtheria, and seven of whooping-cough.

Homes for Epileptics and Inebriates at Langho.

The Chorlton and Manchester joint asylum committee for the erection of a home for epileptics at Langho requires £78,500 for the purpose. Manchester's proportion is £41,210 which the guardians will borrow on obtaining the sanction of the Local Government Board. Mr. Jenner-Fust, the Poor-law inspector, stated at the meeting of the Manchester guardians on June 8th that for the present it was intended to build six homes which would each accommodate 40 epileptics. "This would work out at a high cost per bed but that was accounted for by the fact that administration buildings for all time were to be provided at the outset. Consequently, any additional provision for beds that might be made would work out at a much cheaper rate." The ratepayers will, perhaps, derive consolation from this, though some of them may wonder why they should pay for what is to last "for all time." The Lancashire county council came in for some criticism on account of its lavish expenditure at the meeting of the Lancashire Association of Urban District Councils on June 9th at St. Ann's. Mr. G. W. Spring, the chairman, drew attention to the spending of £70,000 on the inebriates' house also at Langho and said "he was given to understand it now possessed half a dozen inmates." Other instances were given of what was considered excessive expenditure.

Bequests.

By the will of the late Mr. Edward Hulton, newspaper proprietor of Manchester, he left £1000 to St. Mary's Hospital and Dispensary for Diseases of Women and Children; £1000 to the Manchester Children's Hospital, Pendlebury; and also various bequests to Roman Catholic charities.

June 14th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

British Medical Association.

THE South Wales and Monmouthshire branch of the British Medical Association is a large one, for it is made up of five divisions and has a total membership of 447. The activity of the branch, too, as becomes one which includes among its members the President of the Association, is proportionate to its size. At the annual meeting held at the Newport and Monmouthshire County Hospital on June 9th the retiring president, Dr. J. Tatham Thompson, introduced as president for the year Mr. O. E. B. Marsh, the senior surgeon to the Newport Hospital. Dr. William Williams, the medical officer of health of the county of Glamorgan, was elected president for next year, and Dr. F. G. Thomas of Swansea was elected honorary secretary jointly with Dr. W. Mitchell Stevens of Cardiff. The President delivered a very able and instructive address upon the past and present position of surgical disease and its treatment. For the two seats upon the council of the Association to which the branch is entitled there was keen competition. Out of the 447 members of the branch 289 returned voting papers. Mr. J. Lynn Thomas obtained 152 votes and Mr. Pearson R. Cresswell 144. These two gentlemen were elected. The four unsuccessful candidates were Mr. F. W. Brook, Mr. T. Garrett Horder, Dr. Alfred Sheen, and Mr. J. R. Essex. The following motion, on the suggestion of the Cardiff division, was unanimously carried:—

That this meeting heartily approves the application of the Court of the University of Wales for a supplemental charter to grant degrees in medicine. It further appreciates that the application is supported by His Royal Highness the Prince of Wales, the Chancellor of the University, and hereby records its opinion that by the granting of such a charter much benefit will accrue to the people of Wales.

There was at one time a little doubt among some members of the Association as to whether contributions could be made from the funds of a branch for purposes outside the general scope of the Association. The members of the South Wales and Monmouthshire branch appear to have no misgivings upon this score, for they have voted ten guineas to the Porthcawl Rest and have decided that the admission tickets represented by this subscription shall be distributed by the divisions.

Swansea Provident Dispensary.

It has been decided by the committee of the Swansea Provident Dispensary to close that institution on June 20th. The dispensary was established in 1876 and had more than 2000 members. The staff included six medical practitioners and a dental surgeon.

The Midwives Act.

A subcommittee of the sanitary committee of the Glamorgan county council has been appointed to superintend the carrying out of the Midwives Act in the county.

Cardiff Infirmary.

Owing to the resignation of Dr. J. Tatham Thompson, Mr. H. Coilen Eosor becomes senior ophthalmic surgeon to the Cardiff Infirmary. Dr. Frank P. S. Cresswell succeeds Mr. Eosor and Mr. Robert Russell Thomas has been elected assistant ophthalmic surgeon. Mr. Thomas has been acting for several months as clinical assistant to the ophthalmic staff.

Ankylostomiasis.

At the last meeting of the sanitary committee of the Glamorgan county council Dr. T. H. Morris stated that there had been no cases of ankylostomiasis in the county. Arrangements have been made at the Cardiff and County Public Health Laboratory to assist in the diagnosis of any suspicious case which may arise.

British Lake Village at Glastonbury.

On June 1st a large number of archæologists in the county of Somerset visited the excavations at the British Lake Village at Glastonbury. Mr. St. George Gray, curator of the Somersetshire Archæological Society, stated that the excavations were nearly completed and that he and Mr. Arthur Bulleid, F.S.A., were preparing a work on the subject embodying the reports of specialists on the human and animal remains. Mr. Gray added that the lacustrine remains at Glastonbury were historically and archæologically of more value than any others hitherto found in Britain and he assigned them a maximum age of 400 B.C. Mr. Bulleid, who discovered the site, also pointed out various interesting features of the excavations.

The late Alderman Joseph May, F.R.C.S. Eng.

At the meeting of the Devonport borough council held on June 10th the best thanks of the council were unanimously awarded to Mrs. May for the presentation of several valuable oil paintings which were bequeathed by her husband, the late Mr. Alderman J. May, F.R.C.S. Eng., for the Free Public Library of Devonport. It was also stated that the deceased had left the whole of the valuable candelabra presented to him by the inhabitants of the town to his son, Colonel W. Allan May, C.B., R.A.M.C., for his lifetime, and upon his death the candelabra were to become the property of the borough.

June 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

University of Glasgow: Appointment of Professor of Geology.

AT a meeting of the University of Glasgow Court held on June 8th, Principal Story presiding, Mr. John Walter Gregory, D.Sc., F.R.S., professor of geology in the University of Melbourne, was appointed to the chair of geology in the University of Glasgow.

Mixed Classes in Medicine.

The question of the admission of women to all the classes held in the University of Glasgow came up for consideration before the University Court at the meeting held on June 8th. The women students of medicine attending Queen Margaret College—the part of the University buildings devoted to the education of women—have always felt the disadvantage of not being allowed to attend all the medical classes conducted in the University. They are limited in most cases to classes

in Queen Margaret College conducted by lecturers appointed by the University Court. They therefore petitioned the senate to open all university classes to women. The senate remitted the matter for consideration to the medical faculty. The latter body reported that, in its opinion, the present was not a favourable time for any general pronouncement as to teaching in mixed classes. The question, however, might be taken up and decided for any single department in which it might be specially desired that a change should be made in the present arrangements. The senate approved of this report by the medical faculty and the decision was sustained by the University Court.

Bellefield Sanatorium, Lanark.

This sanatorium, erected by the Glasgow and District Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, was formally opened on June 7th by Lady Primrose who was accompanied by the Lord Provost (Sir John Ure Primrose). A large company travelled by special train from Glasgow to Cleghorn, from which place they drove through a beautiful country to the Bellefield estate. The mansion house of this estate has been utilised for accommodation of the medical and nursing staff and for administrative purposes generally. The principal building for the treatment of the patients consists of a composite iron and wood pavilion constructed on the "Speirs" system. This pavilion is well situated in a large open space with a good southern exposure. In the central portion of the block are situated five large double-bedded rooms, each having a large three-sided bay window provided with French casement doors which permit of the patient being wheeled out in bed on to a broad concrete platform which extends along the whole length of the front of the building Behind the bedrooms there is a long well-aired corridor. On the left of this central portion of the block there is a wing which forms a spacious ward for ten patients, while on the right there is a corresponding wing in which there is a large dining room. There are also suitably situated in connexion with the pavilion kitchen, cloak-room, lavatory, and test-room accommodation. Situated in the grounds are also five double-room wooden chalets for sleeping-out purposes. These are erected on the sectional principle which permits of their being easily removed to other parts of the ground if it be found necessary. The council of the association expects to be able to accommodate from 20 to 30 patients within the next six weeks. This will make a beginning of this part of its work—viz., the sanatorium treatment of men of the working class.

£20,000 for Glasgow Charities.

It has been publicly announced that while the provisions of the will of the late Mr. D. S. Cargill, of Park-terrace, Glasgow, were altogether of a private nature, yet the family, knowing that it was the intention of their father to leave certain legacies to the charitable institutions of Glasgow, though prevented from doing so by his sudden death, have determined to distribute in his memory £20,000. Among the institutions receiving legacies are the Royal Infirmary and the Western Infirmary, both of which will receive £2000, while the Victoria Infirmary, the Cancer Hospital, and the Maternity Hospital will each receive £1000. The rest of the money is distributed among the many benevolent institutions of the city and neighbourhood.

June 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The University of Dublin.

THE chair of Latin having been left vacant by the recent election of Dr. R. G. Tyrrell to a senior Fellowship Mr. J. Gilbart Smyly has been selected to fill that position. Mr. Smyly is the son of the late Sir Philip Crampton Smyly.

The Conjoint Board of Examinations.

Mr. Trevor N. Smith has been appointed secretary to the committee of management of the Conjoint examinations of the Royal College of Physicians and Royal College of Surgeons in Ireland in succession to Mr. Greenwood Pim who has retired.

The Irish Medical Association.

The annual meeting of this association was held in the Royal College of Surgeons, Dublin, on June 7th, Dr. L. Kidd being in the chair. There was a large attendance of members. From the annual report presented it appears that there are now 865 members. A special vote of thanks to Dr. Kidd (moved by Dr. H. H. MacDonnell, Dundalk, and seconded by Dr. R. J. Kinkead, Galway) was carried unanimously for the manner in which he filled the office of president during the past year and for the valuable assistance which he had given in the furtherance of Poor-law medical reforms. Mr. R. F. Tobin, the incoming President, then delivered his address on the Present Position of the Poor-law Medical Service in Ireland. Referring to the fact that the air was full of cries of "Forward"—literary education, technical instruction, industrial enterprises, agricultural development, and so on—he asked, Where did the great question that affected all the people of Ireland come in—the question of public health? That was left to the medical officer of health—a man located in a hovel and paid like a sweep. In two recent Irish books, "Ireland at the Cross-Roads" (Tilson Young) and "Ireland in the New Century" (Sir Horace Plunkett) no reference was made to this question, and he trusted that in the next edition of Sir Horace Plunkett's book he would, with Surgeon-General G. J. H. Evatt's leave, incorporate his report on the Poor-law medical system in Ireland. Mr. Tobin thought that the cure for the ills of the Poor-law medical service did not lie in competitive examinations, and he feared that the tendency of the conditions under which dispensary medical officers did their work was "stagnation." He thought that they should make a demand for an immediate increase of salary in every union in Ireland, so as to get at least £150 as an average minimum salary all over Ireland. He doubted if in these democratic days it was possible to make the service a State one; it was neither practicable nor expedient, and he believed that if they pressed forward temperately and firmly all would come right in time. Votes of thanks were then passed to Surgeon-General Evatt for his report and to the Irish Schools' and Graduates' Association for its support. On the motion of Dr. E. C. Thompson, M.P., seconded by Dr. Scott, the council was instructed to take every advisable step in furtherance of the Medical Officers' Superannuation Bill introduced into the House of Commons by Mr. T. W. Russell. The meeting then resolved itself into committee to consider the scale of salaries and fees as fixed by the conference at Enniskillen and after a lengthened discussion the Enniskillen resolutions (fixing a minimum salary of £200 for dispensary appointments in the Poor-law medical service) were adopted. Motions were also passed that travelling expenses should be allowed dispensary medical officers as in other public departments and that efforts should be made to give the medical officers a definite leave of absence of one month in each year. The following motion, proposed by Dr. Kidd and seconded by Dr. Scott, was passed.

That as in the opinion of this meeting the scale of fees (£2 2s.' irrespective of time, distance, or the nature of the operation) allowed for "extra professional services" to consultants for difficult midwifery and operative surgical cases, is inadequate to the responsibilities incurred and the time occupied therein: (a) Every board of guardians be served with notice to that effect and informed that no member of the Irish Medical Association will act as consultant in such cases until the scale of fees is amended to enable the consultant to be paid what to him seems a fair and reasonable fee, in proportion to the services rendered, taking the hour and the distance at which such services are rendered, as well as all the circumstances of the case into consideration. (b) Every board of guardians be respectfully informed that the responsibilities arising in default of consultations in such cases rest entirely with them.

It was also decided that members whose subscription was more than two years in arrear should be struck off unless they should pay up within a month of receiving a demand from the secretary and that the council should be requested to take into consideration the question of appointing paid organisers for the purpose of inducing candidates to abstain from seeking vacant dispensaries, and that a committee (consisting of the president, the vice-presidents, and the honorary secretary) should be formed to confer with the Local Government Board and the boards of guardians, and others to bring about a settlement on the lines laid down by the Enniskillen meeting, with power to negotiate for such terms as may to it seem necessary and to report the same to the council. A vote of thanks was accorded to Mr. Tobin. The annual dinner was held in the evening in the Royal College of Surgeons, Mr. Tobin presiding. On the next day (June 8th) Mr. Tobin entertained the members and other guests to luncheon at the Haughton House, Zoological Gardens

Small pox in Ulster.

Small-pox has for some time been in existence in Belfast but not to a great extent It has, however, broken out in the neighbourhood of Limavady, co. Derry, and Dr. J. W. Watson, medical officer of the workhouse and fever hospital, appeals to clergymen, guardians, and others in the affected areas to use their influence in overcoming "the obstinate stupidity" of people in hiding the disease and refusing to get themselves vaccinated. The disease has been brought from Scotland to the north of Ireland.

The Belfast Guardians and Medical Fees.

It is satisfactory to note that Dr. W. D. Donnan has scored a complete victory over the Belfast guardians in reference to the case reported in THE LANCET of June 4th, p. 1616, a communication having been received from the Local Government Board informing the guardians that Dr. Donnan was entitled to two guineas fee for Dr. A. G. Robb. It is very unfair that the Belfast board of guardians did not, in justice to Dr. Donnan whom it treated so scandalously, announce publicly that it had decided, on the compulsory order of the Local Government Board, to grant the fee.

The Prevention of Glanders.

A deputation from the police committee of the Belfast corporation waited recently upon the public health committee to urge upon that body the desirability of opening the watering troughs in the city of Belfast during the present warm weather. I am glad to say that, acting on the advice of its veterinary inspector, it declined to do as requested. No cases of glanders at present exist in Belfast but the veterinary inspector reported that he could not recommend the opening of the watering troughs as no hardship existed, for at each trough a stand pipe had been fitted up at which a supply of clean water could be had by every driver who carried a bucket for the purpose of giving his horse a drink when required and he said that this system prevented the conveyance of infection from one animal to another. Since glanders had been successfully stamped out in Belfast by the adoption of this method of closing the watering troughs several other large centres had adopted the same method with equal success, while places like Glasgow and London, where the troughs were not closed, were never free from disease. Many of the owners of horses in Belfast, when the troughs were open, made it a rule for their employés that their horses were not to be allowed to drink from the public watering troughs on pain of the employé's dismissal; the men who wished the troughs open at present were principally hackney-car drivers who, the inspector said, could quite easily provide themselves with small buckets to be carried in the well of the car for supplying their horses at the stand pipes.

Dispensary Medical Officers' Fees.

Dr. J. M. Heron of Downpatrick brought an action against the Downpatrick guardians for 6s. alleged to be due from them to him for cab hire whilst visiting a patient on May 25th 1903, in the Strangford district. The facts of the case are that Dr. F. P. MacLaughlin, medical officer, Strangford, requested Dr. Heron to attend for him a dispensary midwifery case as owing to his having been recently present at a case of infectious disease he could not take it up. Two medical men of the union refused to go and Dr. Heron told Dr. MacLaughlin that his fee would be £2 2s. and 6s cab fare which was the fee agreed upon for cases of this character by the medical officers of the union. Dr. MacLaughlin promised to report the matter to the guardians who subsequently sent to Dr. Heron £2 2s. but refused to pay the cab hire, hence the action. The guardians contended that they could not pay the cab hire as they were prevented by the scale which had been drawn up by the guardians and approved of by the Local Government Board. Dr. Heron maintained that he had been summoned by a medical officer of the union and so the case did not fall within any of the articles of the rules for dispensary districts. Further, the guardians contended that Dr. MacLaughlin had no authority to bind the guardians for payment of any sum in excess of that prescribed by the guardians' scale, and it was also stated that the guardians had been surcharged at the instance of Dr. Heron himself in respect of the two guineas which had already been paid to him. The county court judge decided in favour of the guardians on all the points.

June 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Cancer Mortality.

AT the meeting of the Academy of Medicine held on May 31st M. Périer read a report of the work of M. Foucault of Fontainebleau on cancer mortality in the district of Fontainebleau. The report dealt with the cancer mortality as affecting the district in general, then with the relation of this to the cancer mortality in certain localities (*zones*), and finally with each street and house in the localities respectively. The statistics taken as a whole showed that for every 14 deaths from cancer in Fontainebleau there would be 11 for the whole of Paris. In Fontainebleau cancer causes 7 per cent. of the total mortality. Certain houses seem to have a greater influence as regards cancer production than others but heredity seems to have but little influence at least as regards direct transmission. As a rule cancer mortality rises directly in proportion as the locality lies low and is damp, as the houses are badly ventilated and lighted, and as the drainage is inefficacious. It is worthy of note that, speaking generally, cancer in towns decreases proportionately with a decrease in the population but Fontainebleau occupies a much higher place in the list than it should with regard to its population. The theory that cancer spreads in damp and low localities is not accepted by all. M. de Bovis was compelled to admit that geographical and geological theories on cancer do not as yet explain the problems of its dissemination and in any case many more observations are necessary before a decision on the matter can be arrived at.

The Excito-secretory Action of Sodium Chloride in Nephritis.

At the meeting of the Hospitals Medical Society held on June 3rd M. Claude reminded his hearers that in collaboration with M. Mauté he had noted the augmentation in the excretions brought about in certain cases of nephritis by the ingestion of an excess of sodium chloride and at the meeting in question he brought forward more observations tending to confirm his former opinion. A certain amount of corroboration of the theory is supplied by some ingenious experiments of M. Rocque and M. Lemoine who found that a patient in whom the test for phloridzin glycosuria proved negative up to the day on which the administration of chloride of sodium was begun gave a positive reaction soon after the commencement of "hyperchloridation." Chloride of sodium may therefore sometimes be a stimulant of the renal functions.

The Sterilisation of Corks.

At the Academy of Sciences on May 24th M. d'Arsonval read a paper for M. Bordas. The latter observer said that in order to destroy the fungi the spores or mycelium of which exist in cork and give rise to volatile substances which in their turn give rise to what is known as "corking" in wines or other fluids the corks employed should be sterilised in vacuo. They are kept in a chamber heated to about 120° C. for some ten minutes; then a vacuum is produced in the chamber and steam is admitted and kept at a temperature of about 130° C. for a further ten minutes. The corks will then be quite sterile and will not give any disagreeable flavour to the wine.

Fees for the Treatment of Relatives.

The sixth chamber of the Civil Court of the Seine has just given judgment in the following case. Dr. B. had professionally attended a distant relative of his wife. He had visited her in consultation eight times in the space of one year and she lived 130 kilometres from the town in which he lived. When the lady died the sole legatee, to whom Dr. B. sent in his account, repudiated the debt and founded her repudiation upon certain letters which Dr. B. had written in which, among various family matters, he had given directions for treatment and had further mentioned the dates upon which the consultations with the family medical man would take place. The court gave judgment for Dr. B. and directed the legatee to pay to him 800 francs with the legal interest and to pay costs.

Osteoplastic Amputations of the Leg.

The Society of Surgery has discussed this important question at two successive meetings. On May 25th M. Tuffier said that in his opinion it was very difficult for patients after amputation of the leg to support their weight on the stump in walking; this was, in fact, only possible when the skin which covered the stump was capable of

enduring prolonged pressure without inconvenience, like the skin of the knee or heel. In all other cases the patients supported themselves on the marginal portions of the cone or on the lateral portions of the tuberosities of the tibia whereby walking became easier and less painful. M. Quénu said that an attempt ought to be made to provide a suitable pad for the end of the stump, either by a skin flap, a cushion of muscle, or tendinous suture. The application of an osteoplastic terminal over the cut end of the bone was particularly advisable and M. Quénu had obtained excellent results by this means in one case. M. Félizet agreed generally with M. Quénu; he recommended that the skin of the stump should be carefully selected and that the stump should be padded with soft parts such as the neighbouring muscles and tendons. Moreover, the support afforded by the stump ought always to be reinforced by a second point of support higher up, such as the tuberosities of the tibia. On June 1st M. Delbet discussed Gritti's amputation. He has performed this operation six times since 1898 and in all cases he obtained perfect adhesion of the osseous plate fixed on the tibia, a result which he attributed in great part to the preservation of the peripheral periosteal lamellæ. In three of these patients whom he saw several times afterwards he succeeded in ascertaining that this osseous plate remained well in its place and did not become atrophied. One of his patients had a thigh amputated subsequently and the portion which was removed showed that the plate was firmly united to the tibia and was in a sound condition. It might therefore be inferred from the anatomical point of view that this amputation was satisfactory. M. Delbet had also convinced himself that his patients in walking rested their weight on the stump. Two of them did not require to walk much, but in the third, who had to be on his legs all day long, a hygroma which became fistulous formed at the level of the stump. M. Championnière explained the reasons why he was not in favour of Gritti's amputation, although the method of performing it had been improved and the results were now better than formerly. This operation, in his opinion, was too complicated, and although it lengthened the stump and tended to prevent infection it nevertheless was subject to the inconvenience of being often followed by fistulæ. The supporters of this operation alleged that the extremity of the stump could bear the weight of the patient in walking, but in order to prove this it would be necessary to see the patients after the lapse of some years; those whom he had seen did not walk very well. In conclusion M. Lejars remarked that M. Szypiorski, who had performed this operation eight times, had recorded some cases which still showed good results after several years.

Chloroform.

A complicated question arising out of the death of a patient at the Hôpital Saint-Antoine is at present the subject of a judicial inquiry held by the Parquet of the Seine. A man, 52 years of age, was kicked by a horse, whereby his right leg was fractured below the knee, and he was therefore admitted into the hospital. After a careful examination the surgeon decided that an operation was absolutely necessary. The patient was accordingly anæsthetised with chloroform and died a few moments afterwards. The surgeon immediately informed the commissary of police and requested that an inquiry should be held, as he attributed the death to the chloroform which he had to use. The hospital authorities protested against this imputation, the commissary submitted the matter to the Parquet, and the director of the Assistance Publique caused the chloroform supplied at the Hôpital Saint Antoine to be analysed. M. Prunier of the Academy of Medicine stated that the chloroform was of excellent quality. The surgeon refused to operate if he were not supplied with other chloroform and his request was granted. The Parquet having opened an inquiry, Dr. Thoinot made a necropsy which showed that death was due to the anæsthetic; a chemist was also appointed by the magistrate to examine the chloroform used in surgical operations at the Hôpital Saint Antoine. While these events were in progress Dr. Témoin made a communication on the subject of chloroform at a meeting of the Academy of Medicine held on June 7th. It is well known that this anæsthetic is liable to decomposition under the influence of light and perhaps also under the influence of some other forms of radiant energy possessing chemical properties which are only just becoming recognised. It has even been found to deteriorate in 24 hours. All the means ordinarily recommended for its preservation in good condition are more or less untrustworthy, but Dr. Témoin said that he had for several years used a very simple method by which chloroform may be kept for an indefinite time without decomposition. This method, which was devised by M. Allain, a military apothecary (*pharmacien major*), consists in the addition of a little flower of sulphur—four grammes to the kilogramme of chloroform. The small quantity of sulphur which the chloroform dissolves appears to concentrate on itself the decomposing action of the luminous rays, for it is precipitated in the presence of light and is redissolved in the dark. Using this method Dr. Témoin has given chloroform 6000 times without the slightest mishap and he has presented the Academy with a bottle of chloroform prepared in 1896 which he believes to be in excellent condition.

June 14th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Serum Treatment of Puerperal Fever.

A NEW serum for the treatment of puerperal fever has been produced in Professor Paltauf's institute and experiments have been made with it by Dr. Peham in Professor Chrobak's clinic. The chief difference between the original serum of Marmorek and Paltauf's serum consists in the fact that in the former the toxic action of the streptococci is increased as much as possible by repeated "passage," whereas the new serum, on the contrary, is made by injection of fresh cultures of streptococci obtained from puerperal fever and by immunisation of a horse, just as with Moser's serum for the treatment of scarlet fever and Tavel's serum. In all the cases of puerperal fever the new serum was injected into the subcutaneous tissue of the anterior surface of the upper part of the thigh, the quantity injected at a time being usually from 50 to 100 cubic centimetres. In some cases the injections were repeated so that in the course of several days a total quantity of about 250 cubic centimetres was administered. In this relatively large dose the new serum differs essentially from Marmorek's serum, of which seldom more than 30 and very often only 10 or 15 cubic centimetres are injected. Attention to this seems to be just as important as the administration of the serum at the earliest possible moment. No secondary ill effects were observed at the place of injection, but at varying intervals from the third to the sixth day an erythema appeared which soon faded again. Simultaneously with these symptoms of reaction the temperature sometimes rose for a brief period. The cases treated with serum were all severe ones and some of them were very severe. Up to March, 1904, there were 26 cases treated with serum in Professor Chrobak's clinic. In 18 of these cases bacteriological examinations showed the presence of streptococci, the organisms being in pure culture in 11 instances, while in seven there was a mixed infection; three cases were not bacteriologically examined, in two the results of examination were negative, and in two others the results were inconclusive; one of the patients did not suffer from puerperal disease but from cystitis and pyelitis due to bacterium coli, as was proved by the necropsy. As might have been expected, the results of the treatment varied according to the nature of the infection. No effect was produced on conditions which depended on bacterium coli or diplococci, but there was no death among the patients who suffered from pure infection with streptococci, and the temperature usually fell in the course of the first or second day, a fact which was somewhat remarkable in view of the general severity of the symptoms.

Skin Eruptions consecutive to the Use of Theocin (Theophyllin).

Dr. Pauly has reported a case of skin eruption occurring in a woman to whom theocin had been administered as a diuretic on account of aortic insufficiency and stenocardiac pain. She took altogether in the course of two days 1·5 grammes, of which two doses of 0·6 gramme were given in enemata. On the second day there appeared an itching eruption which soon spread over the whole body and was accompanied by vomiting and giddiness. The theocin was immediately stopped and replaced by four grammes of theobromin sodio-salicylate given daily. The eruption quickly faded and four days after its appearance it could only be observed as a reddish eczema on the trunk. Not long after

this case a second one occurred in Dr. Pauly's clinic. Theobromin has an action for the most part similar to that of theocin (theophyllin) but it never produces the effects above described. The investigations of Emil Fischer on the synthesis of the purin group have made known the constitution both of theobromin and theocin (theophyllin) and an explanation of their varying physiological effects has thereby been rendered possible. Both of them are isomeric with dimethylxanthin, but they differ from one another in respect of the grouping of one methyl molecule. Other interesting examples of this kind may be found in Dr. Sigmund Fränkel's treatise on the synthetic production of substances used in medicine. For instance, pyramidon is antipyrin in which one H is replaced by $N(CH_3)_2$. Antipyrin causes skin eruptions in about 10 per cent. of the cases in which it is used but this very seldom happens with pyramidon.

Adrenalin in the Treatment of Hæmorrhages.

At a recent meeting of the Vienna Gesellschaft der Aerzte Dr. Hermann Schlesinger showed two patients presenting hæmophiliac symptoms. One of them was a man who was liable to severe bleeding after a slight injury. A few days before admission into hospital he began to suffer from copious intestinal bleeding, the stools consisting almost entirely of blood. From 10 to 20 drops of a solution of adrenalin, of strength 1 per 1000, were given to him by the mouth every hour and gelatin was also given by the mouth. By these means the bleeding was stopped. Although he took about 30 grammes of the solution of adrenalin in two days no undesirable secondary effect was observed. The second patient, a woman, about 40 years of age, was admitted to the hospital with symptoms of Werlhoff's morbus maculosus which had appeared suddenly. The symptoms included free bleeding from the nose, mouth, and pharynx, vomiting of blood, passing of blood from the bowels, hæmaturia, and extensive hæmorrhage into the skin. As the bleedings recurred at short intervals the patient became extremely anæmic and her life was despaired of, when the administration of adrenalin brought about a sudden change. The bleeding from the urinary passages and the gastro-intestinal tract came to a stop and the hæmorrhage into the skin made no further progress. Adrenalin produced a similarly quick effect in the case of a great many patients suffering from bleeding from the bowels. Dr. Schlesinger also made successful trials of adrenalin in cases of ulcer of the stomach and the hæmorrhages of enteric fever. No toxic effects were produced, neither was there any considerable rise of blood pressure when five or ten drops of a solution of strength 1 per 1000 were taken every hour, a circumstance from which he infers that the activity of the heart is not likely to be increased by the internal use of adrenalin. No benefit seemed to be produced in hæmoptysis. An observation was made which might be of interest from a surgical point of view. It was intended to make an examination of the blood of a patient on the second day after the administration of adrenalin but the attempt was unsuccessful for the blood coagulated while in the act of escaping from the puncture. Adrenalin might therefore perhaps be useful in operations which are likely to be attended with much loss of blood.

June 13th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Canadian Medical Association.

As several gentlemen of the medical profession in the United Kingdom are expected to be present at the thirty-seventh annual meeting of the Canadian Medical Association which convenes this year in Vancouver, British Columbia, from August 23rd to 26th, arrangements will be made whereby they can take advantage of the reduced rates from either Halifax or Montreal to the Pacific coast. The trip from Montreal over the Canadian Pacific Railway is made in five days and arrangements will be in effect for "stop overs" after Winnipeg, so that advantage may be had of the privileges for seeing the great North-West country of Canada and the Rocky Mountains. Further, Chicago and St. Louis may be reached by special arrangements before leaving Montreal or Halifax. Members of the medical profession in Great Britain and Ireland are extended a very cordial invitation to be present, as it is the first time that the association has been convened on the Pacific coast and the present occasion affords them an unusual opportunity of seeing the vastness of the Dominion of Canada and its great wealth of resource. Should any desire to put themselves in communication with the general secretary they should address Dr. George Elliott, 129, John-street, Toronto, Ontario, Canada.

Provincial Sanatorium for Consumptives opened in Nova Scotia.

The legislature of the province of Nova Scotia by an Act passed in March, 1900, appropriated a sum of money for the erection of a sanatorium for cases of tuberculous disease of the lungs. The institution is now completed and will be opened for the reception of patients in a month's time. The Government sanatorium is situated at Kentville in the famous Annapolis Valley about 70 miles from the city of Halifax. The building was erected, from plans designed by Dr. A. J. Richer of Montreal, at a cost of $20,000 and is capable of accommodating 20 patients with a complete staff. According to the terms of the Act two physicians are to be appointed from the city of Halifax who shall examine all patients and determine their fitness for admission. There will be no resident physician but one of the practising physicians of Kentville will make regular visits to the institution. The sanatorium will be in charge of a lady superintendent who is a graduate of one of the Boston (United States of America) hospitals and who has also had a special training in the Massachusetts State Sanatorium and in the Sharon Sanatorium in Massachusetts.

The Canadian Association for the Prevention of Consumption and other Forms of Tubercular Disease.

The fourth annual meeting of the above association was held at Ottawa on April 20th and 21st. The need of this organisation is emphasised by the fact that there are in the Dominion of Canada between 30,000 and 40,000 people suffering from tuberculosis. The annual report of the executive council showed that during the past year an active campaign had been carried on, over 100,000 leaflets on "How to Prevent Consumption" having been distributed. Many lectures had also been delivered and there was on the part of the medical health officers all over the country the heartiest coöperation. Dr. Ravenal, the eminent United States authority, who is assistant medical director of the Henry Phipps Institute at Philadelphia, was present at the meeting and delivered an able address on "Animal Tuberculosis in Relation to Human Health." In the whole Dominion of Canada there are now five institutions devoted to the treatment of consumption. Three of these are under private control and management, one is the property of the National Sanitarium Association, and the other is the institution recently opened at Kentville. The total accommodation of all these, with that in hospitals to which consumptives are admitted, probably does not exceed 200 beds.

Provincial Sanatoriums.

On May 24th there was held at Ottawa an important meeting of the executive council of the Canadian Association for the Prevention of Consumption and other Forms of Tubercular Disease, at which a committee was appointed to take steps to secure the coöperation of municipalities, provincial governments, and the Federal Government for the establishment of one large sanatorium in each of the provinces for the treatment of consumptives. Dr. P. H. Bryce, Ottawa, was named as the convener of this committee and other members of the medical profession who will serve thereon are Dr. Gordon Bell, Winnipeg; Dr. J. D. Lafferty, Calgary, North-West Territory; and Dr. C. J. Fagan, Victoria, British Columbia. The secretary of the association was also directed to visit Prince Edward Island, Nova Scotia, and New Brunswick in August and September with a view to lecture upon the causes and prevention of consumption and to lecture in Ontario during June and July. In addition a committee of all the members of the executive council of the association resident in Ottawa, with Dr. H Beaumont Small as convener, was appointed to take immediate action for the purpose of organising a local branch of the association in Ottawa with a view to immediate and energetic action in coöperation with those who have already moved in the matter of the establishment of a sanatorium for the city of Ottawa and the surrounding country.

A Medical Institute for Toronto.

Under the supervision of Dr. J. F. W. Ross of Toronto, who is president of the Ontario Medical Association as well as president of the Ontario Medical Library Association, a fine

home has recently been purchased adjacent to the medical buildings of the University of Toronto which will hereafter be devoted to the purposes of the Ontario Medical Library and the various medical societies of Toronto. This is a most important step towards consolidating the medical societies of Toronto under one roof with the Ontario Medical Library and will tend to bring the profession in Toronto more in touch with the profession throughout the province.

Montreal General Hospital.

For the quarter ending March 31st the treasurer's account for the Montreal General Hospital shows the receipts to have been $34 598 and the expenditure $26,478. During the three months there were treated to a conclusion 754 patients in the wards, of which number 69 died. 19 of these deaths occurred within three days of their admission, making the mortality-rate of ordinary hospital cases 6·6 per cent. In the outdoor departments there were 9204 consultations, an increase of 244 over the corresponding quarter of 1903. During the quarter the following changes in the staff took place: Dr. John McCrae resigned as resident pathologist and Dr. D. B. Gillies was appointed his successor. The term of Dr. W. G. Turner as medical superintendent having ended Dr. Roland P. Campbell has been appointed as his successor. A site has been secured for the new contagious diseases hospital to be built in connexion with this institution. Upon this it is proposed to erect a building at a cost of $150,000. Of this amount only $35,000 have been subscribed, of which Sir William Macdonald contributed $15,000.

Reporting Births in Montreal.

The city council of Montreal has recently adopted a new by-law under which the physicians of that city are required and ordered to report all births occurring in their practices. Only a month ago the physicians of St. John, New Brunswick, successfully resisted a similar law in the courts on the ground that the duty of dealing with vital statistics was delegated to the Dominion authorities and not to the provincial authorities by the British North America Act. Just why physicians should be asked to work for the State without compensation, even in such a small matter as the reporting of a birth, does not seem quite clear and whilst these laws may be good and proper they should carry with them some considerations other than barren orders.

Making Medical Men by Act of Parliament in Quebec.

Almost every session of the Quebec legislature someone promotes a private Bill for the relief of some medical student who has failed to qualify himself as he should do before entering upon the study of medicine. During the present session of the legislature there has been presented a Bill of more than ordinary interest, because it proposed to relieve from matriculation in a *bonâ-fide* manner nearly 250 medical students. This naturally had the effect of stirring up the Quebec College of Physicians and Surgeons which entered a vigorous protest against this wholesale practice of relieving medical students from securing their proper qualifications. Those students who had pursued their medical studies in the proper way also rose in arms and to designate their unfortunate associates employed the expressive term "scab." Sir William Hingston states that the laws relating to the study of medicine in the province of Quebec are very unsatisfactory and students should receive some punishment for ignoring or neglecting the laws in force. I am not in a position to state what has been the outcome of the measure of relief; but the medical profession in Quebec hopes that if relief is granted this time it will be the last time any one approaches the legislature for a similar purpose. At all events this is the way several members of the profession who are in the legislature express themselves.

A Methodist Hospital for Toronto.

A short time ago the leading Methodist periodical circulating throughout Canada advocated editorially the building of a Methodist Hospital in Toronto, and in view of the congested state of all of the Toronto hospitals during the past winter there would appear to be a pressing need for some such institution. By the will of the late Hart A. Massey a legacy was left for this purpose and is available, providing that a sum equivalent to that left by Mr. Massey—namely, $100 000—can be raised by popular subscription. It is understood that the Medical Faculty of the University of Toronto favours the establishment of this hospital in connexion with the work carried on by it in educational affairs.

June 1st.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and conformed to the by-laws have been admitted Members of the College:—

Arthur James Arch, Birmingham University; John Watson Barber, Yorkshire College and General Infirmary, Leeds, and St. Mary's Hospital; Alfred Ernest Barclay, Cambridge University, Owens College, and Royal Infirmary, Manchester, and London Hospital; Sidney Bazalgette, St. Thomas's Hospital; Herbert Owen Marsh Beadnell and James Bromley, Guy's Hospital; Kenelm Digby Bell, St. Bartholomew's Hospital; Albert Edward Blackburn and Charles Herbert Booth, Yorkshire College and General Infirmary, Leeds; John Cecil Openshaw Bradbury, Cambridge University and Guy's Hospital; William George Cheatle, St. Mary's Hospital; Roderic Arthur Clapham, B.A. Camb., Cambridge University and London Hospital; James Alexander Cowie, B.A., B.Sc. New Zel., New Zealand and Glasgow Universities; Arthur Humphry Curtis, University College Hospital; Harold John de Brent, St. Thomas's Hospital; Kenneth Alan Crawford Doig, Westminster Hospital; Percy Toplis Drabble, Sheffield and University College Hospital; Theodore Drysdale, B.A. Camb., Cambridge University and St. George's Hospital; Jean Joseph Toussaint Raoul Felix, Middlesex Hospital; William Henry Flint and Cuthbert Keay Gettings, Birmingham University; Charles Ashley Flintoff, Charing Cross Hospital; George Rammell Footner, Cambridge University and St. Thomas's Hospital; Harold Pace Gibb, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; Kenneth Mayoh Gibbins, St. Mary's Hospital; Charles Aubrey Godson, St. George's Hospital; Richard Henry Cyril Gompertz, B.Sc. Lond., King's College Hospital; John Fleming Goodchild, M.D., C.M. Canada, B.Sc. Edin., Queen's University, Kingston, Ontario, and Glasgow University; Frederick William Goonetilleke, L.M. & S. Ceylon, Ceylon Medical College and King's College Hospital; Arthur Augustus Russell Green, Birmingham University; Frederick Rosenberg Harris, St. Mary's Hospital; Henry Francis Hatfield, Guy's and St. Bartholomew's Hospital; Walter Haward, Durham University and St. Thomas's Hospital; Verner George Heseltine, St. Bartholomew's Hospital; Nelson Wood Hill, London Hospital; Donald Alexander Hingston, B.A., M.D. Laval, University of Laval and King's College Hospital; Charles Dyson Holdsworth and Robert Ernest Humphry, University College Hospital; Harold Foster Horne, B.A. Camb., Cambridge University and London Hospital; Arthur Cyril Hudson, M.A., M.B., B.C Camb., Cambridge University and St. Thomas's Hospital; John George Ingouville, St. Bartholomew's Hospital; Norman Bremer Vickers Jacob and David George Lloyd, London Hospital; William Holland Kaye Owens College and Royal Infirmary, Manchester; William Neave Kingsbury, Middlesex Hospital; John Lambert, B.A. Camb., Cambridge University and London Hospital; William Kingdom Legassick, University College Hospital; Harold Charles Ling, L.R.C.P. Edin., University College and Royal Infirmary, Glasgow, and Yorkshire College and General Infirmary, Leeds; John Tryweryn Lloyd, Liverpool University; Dugal MacBane, M.B. Toronto, University College, Toronto and Middlesex Hospital; Stephen Morton Mackenzie, B.A. Camb., Cambridge University and London Hospital; Charles William McLeay, B.A. Toronto, M.D. West. Univ., Western University, London, Ontario; Frank McTavish, Toronto University; Vivian Gray Maitland, Birmingham University; Perceval Aubetin Mansfield, B.A. Oxon., Oxford University and King's College Hospital; Horace Sidney Matson, St. George's Hospital; Bernard Moiser, Gerald Nunn, and Charles Sculthorpe Morris, Guy's Hospital; Athol Raymond Moore, B.A. Camb., Cambridge University and London Hospital; Robert Foster Moore, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; Stuart Murray, M.B., Ch.B. Victoria, Owens College and Royal Infirmary, Manchester; Brefney Rolph O'Reilly, M.D., C.M. Trinity Toronto, Trinity College, Toronto, and University College Hospital; Frederick Paine, Middlesex Hospital; Frederick Henry Parker, B.A., M.B. Camb., Cambridge University and Guy's Hospital; James Sidney Pascoe, Charing Cross Hospital; Sydney Greenwood Penny and Bryan Pick, St. George's Hospital; William Cowper Pickering, St. Bartholomew's Hospital; Hugh Falkenburg Powell, University College Hospital; John Maurice Bladee Rahilly, St. Mary's Hospital; John Valentine Rees, University College, Cardiff, and London Hospital; George Russell Rew, King's College Hospital; Cyril Stephen Stokes Rigby, Birmingham University; Frederick Emilius Roberts and Malcolm Winfred Shutte, St. George's Hospital; Edwin Walter Routley and Harvey Llewellyn Shelton, Guy's Hospital; Frederick Henry Rudge, University College, Bristol; Abraham Schapiraff, M.D. Geneva, University of Geneva and King's College Hospital; John Cecil Smyth, M.B., Ch.B. Vict., Owens College and Royal Infirmary, Manchester; William Gordon Speers, St. Mary's Hospital; Robert Douglas Sproat, M.B. Toronto, University of Toronto and University College Hospital; John Kendall Syms, University College Hospital; John Backus Taylor, B.S., M.D. Univ. of Michigan, Michigan University and University College Hospital; William Traill Thomson, King's College Hospital; Charles Edward Treble, M.B. Toronto, Toronto University and University College Hospital; John Henry Trench, B.A. Camb., Cambridge University and University College Hospital; Henry James Davey Walker and Leonard Warren, London Hospital; Joseph Ward, L.S.A. Lond., University College, Sheffield; John Douglas Campbell White, Cambridge University and London Hospital; Edward Kynaston Williams, B.A. Camb., Cambridge and St. Andrews Universities and St. Bartholomew's Hospital; Harold Waterlow Wiltshire, M.A. Camb., Cambridge University and King's College Hospital; Robert Stanton Woods, Queen's College, Belfast, University College, and London Hospitals; Henry Mogridge Woodward, B.A. Oxon.,

Oxford University and Guy's Hospital; Herbert Francis Woollenden, University College, Liverpool; and Graham Pallister Young, King's College Hospital.

UNIVERSITY OF CAMBRIDGE.—The following medical and surgical degrees were conferred on June 9th:—

Doctor of Medicine.—W. P. S. Branson, Trinity; A. R. M. Brenan, Trinity; and B. N. Tebbs, Queens'.
Master of Surgery.—Professor Howard Marsh, King's.
Bachelor of Medicine and Bachelor of Surgery.—C. L. Netwill, Trinity; C. R. Howard, Pembroke; W. Hastings, Christ's; and C. Burrows, Emmanuel.
Bachelor of Medicine.—H. R. Fisher, Emmanuel.
Bachelor of Surgery.—T. G. M. Hine, King's; R. E. Whitting, King's; and B. N. Tebbs, Queens'.

Dr. D. MacAlister and Mr. Strangeways have been appointed examiners in Pharmacology and in Pathology respectively for the Third M.B. Dr. A. Macalister and Dr. Guillemard have been appointed members of the new Board of Anthropological Studies. Mr. Duckworth has been reappointed University Lecturer in Physical Anthropology.

TRINITY COLLEGE, DUBLIN.—At the final examination in medicine held in Trinity Term the following candidates were successful:—

James G. Wallis, George B. M'Caul, Hugh Stewart, William M. Wade, Washington P. Tate, Thomas Wilson, Charles J. Coppinger, Harold T. Marrable, and Edward G. Scroope.
Section A.—W. G. S. Haughton (passed on high marks), John D. Sands, Percy B. Egan, Thomas T. H. Robinson, William F. Samuels, William J. Thompson, Francis J. Usher, William C. Mac Fetridge, Thomas B. W. Mac Quaide, Alfred C. Elliott, Edward D. Atwell, George Dougan, James M. Harold, and Ernest C. Phelan.

Mr. William Fairbank, surgeon to His Majesty's household at Windsor Castle and surgeon-in-ordinary to their Royal Highnesses Prince and Princess Christian, has been appointed by the Lord Chancellor a magistrate for the county of Berks.

DONATIONS AND BEQUESTS.—The late Mr. W. G. Marshall of Norton Manor, Taunton, has bequeathed £500 to the Taunton and Somerset Hospital.—Mr. Isaiah Train Butters of Plymouth has bequeathed £100 each to the Western Counties Blind Asylum and the Royal Albert Hospital, Devonport.—Mr. Alfred George Hayman has by his will bequeathed £100 to the North Devon Infirmary at Barnstaple.—Mr. Frederick Gordon of Stanmore has bequeathed by his will £1000 to King Edward's Hospital Fund for London and £500 to the Surgical Aid Society.—By the will of Mrs. Harriet Colville of Macclesfield, Chester, £500 are bequeathed to the Macclesfield General Infirmary.—The East London Hospital for Children has received a donation of £500 from the trustees of Smith's Charities and £994 19*s.* 6*d.* from Mr. H. Ridley James, being a fourth share of the residue of the estate of the late Miss Clara Maria Scholey.—By the will of Dame Margaret Broak M'Culloch of Chislehurst, widow of Sir James M'Culloch, £150 have been bequeathed to the London Hospital and like sums to the Seamen's Hospital at Greenwich, to the Brompton Cancer Hospital, to the London Fever Hospital, to the Royal London Ophthalmic Hospital, to the St. Luke's Home for the Dying, to the Female Convalescent Home at Brighton, and to the Bromley Cottage Hospital.

THE FATHER OF ELECTRICAL SCIENCE.—The tercentenary of the publication of the work, "De Magnete," by William Gilbert, M.D., of Cambridge, physician to Queen Elizabeth and successively censor, treasurer, and president of the Royal College of Physicians of London, was celebrated in 1900 and the name of the father of electrical science has since been commemorated in various ways by the inhabitants of Colchester generally and by the medical men of that town. As William Gilbert may be said to have laid the foundations of the science of magneto-electricity in this country it is fitting that the Institution of Electrical Engineers should have actively associated themselves with the tercentenary and on June 11th that body paid a visit to Colchester to take part in the ceremony of unveiling a picture which it has presented to the inhabitants of Gilbert's birthplace. The painting, which represents Gilbert demonstrating experiments in magnetism before Queen Elizabeth, is the work of Mr. A. Ackland Hunt. After the ceremony, which was performed by the Mayoress, a document signed and sealed by Gilbert in 1598 was presented to the town by Dr. E. L. Fenn who had recently discovered the relic among his family papers. Those present included Mr. R. K. Gray (President of the Institution of Electrical Engineers), Professor Ayrton, Dr. Silvanus Thompson, Dr. Larmor, Professor J. D. Everett, Professor Perry, Professor Fergusson, and Dr. W. H. Allchin.

WEST OF ENGLAND EYE INFIRMARY.—As a result of a recent bazaar the sum of £930 has been handed to the committee of the West of England Eye Infirmary, Exeter.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced.—Matvaei Ivanovitch Talysin, once professor of physics at the University of Kieff and previously thereto professor in the Alexandroffsk Lycée, has just died in his ninety-fifth year. He had been 40 years retired.—Dr. Dietz, the well-known Stuttgart alienist.—Dr. Larguier des Bancels, professor of forensic medicine in Lausanne.—Dr. Vincent, inspecting medical officer of the French colonial troops.

SEWERAGE OF AXMINSTER.—On June 9th the Devon county council decided that it will take action under the Rivers Pollutions Act to restrain the Axminster district council from discharging the crude sewage of the town into the river Axe. Before the sewage disposal of Axminster can be dealt with it will be necessary for the district council to agree upon a complete scheme for the drainage of the whole town, for the Local Government Board has stated that it will not sanction the loan of any money unless a complete scheme is submitted.

THE LATE MR. R. R. SEWELL.—Mr. Robert Russell Sewell, M.B. Lond., J.P., who died on June 2nd at Sandhurst Vicarage, the residence of his nephew, Canon Sewell, was one of the oldest graduates of the University of London and formerly practised for many years at Bridgwater, of which borough he was on the commission of the peace. The deceased was in his eighty-sixth year and since his retirement had lived with Canon Sewell. The funeral took place at Wotton-under-Edge, Gloucestershire, on June 4th.

THE LATE MR. THOMAS SANDERS.—Mr. Thomas Sanders, F.R.C.S. Eng., who died at his residence, East-street, South Molton, Devon, on June 7th, in his sixty-second year, had practised in South Molton for about 36 years and was coroner for the South Molton district of the county of Devon. He received his medical education at University College Hospital, London, and took the qualifications of M.R.C.S. Eng. and L.S.A. in 1864 and 1866 respectively. In 1876 he was admitted F.R.C.S. Eng. He was highly respected in South Molton and the district, and much sympathy is felt there for his widow and family.

THE ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.—A special general meeting of this association will be held at the Queen's Hotel, Midland Railway Station, Leeds, on Friday, July 8th, at 4 P.M., when Dr. A. E. Cope will open a discussion on the Best Methods of Performing the Operation of Vaccination. Members of the association who propose to attend the dinner which will follow at 7 P.M. are requested to communicate as early as possible with Dr. Arthur Drury, Landon House, Halifax, in order that the necessary arrangements may be made. The tickets will be 5*s.* each. Members travelling from London can leave by the 11.30 A.M. train from St. Pancras and arrangements will be made with the Midland Railway Company for special terms and accommodation if sufficient members intimate their intention to travel by that train to Mr. Charles Greenwood, 1, Mitre Court-buildings, Temple, London, E.C., on or before June 28th.

ELECTRO-MEDICAL APPARATUS.—A large assortment of electro-medical apparatus is described and figured in a new catalogue issued by the General Electric Company, Limited, of 71, Queen Victoria-street, London, E.C. There are 19 varieties of portable induction coils, nine varieties of magneto-machines, four patterns of constant current batteries containing from 12 to 40 cells, an electro-magnet for removing particles of iron from the eye, transformers, and apparatus for surgical electrolysis, epilation, and galvano-cautery. Among the more elaborate and expensive apparatus there are coils for x-ray work, giving sparks from 8 to 12 inches long; various interruptors, fluorescent screens, focus tubes with and without regulators, and a pattern of focus tube for therapeutic use in which the x rays are projected in one direction only. Various sizes of influence machines for the

therapeutic application of static electricity and for working x-ray tubes are shown, also high-frequency transformers for medical use, a high tension oscillating arc lamp producing ultra-violet light for the Finsen treatment, and apparatus for ozonising air or oxygen to be inhaled. The small electric motors, a number of which are described, include the "Geeko" electric dental and chiropodic engine supported on a telescopic stand and driven by the current from any wall plug.

CHELSEA CLINICAL SOCIETY.—The seventh annual dinner of this society took place at the Criterion Restaurant, Piccadilly-circus, London, on June 9th. Dr. T. Vincent Dickinson, the President, occupied the chair. The usual loyal toasts having been duly honoured, the President proposed the toast of "The Chelsea Clinical Society" and congratulated those present on the increase in the number of members of the society. He described how it had become necessary to appoint Mr. J. Foster Palmer to the post of editorial secretary for the preparation of reports of the meetings of the society. This toast was replied to by Sir Isambard Owen who is the President-elect. The toast of "The Visitors" was submitted by Dr. J. B. Ball who, in the course of his remarks, described how the Mayor of Chelsea helped in every way he could to forward the best interests of the medical charities in the district. The Mayor of Chelsea replied to the toast which was also acknowledged by the Rev. Dr. Collison. Mr. E. Noble Smith then gave the toast of "The President and the Officers of the Society," which was suitably responded to by the President who concluded his reply by proposing the health of Mr. Palmer, the newly appointed editorial secretary. After Mr. Palmer had said a few words thanking those present for the hearty way in which they had acclaimed the toast the proceedings terminated.

THE ANNUAL MEDICAL GOLF TOURNAMENT.—The annual medical golf tournament was held at the Northwood Golf Club, Northwood, on June 9th. The weather was favourable and the secretary of the Northwood Golf Club must be congratulated on the excellent condition of the course and greens. The competitors were divided into two classes: the first class consisted of those with handicaps of 12 and under and the second class of those with handicaps of more than 12 with a limit of 24. Those competitors who were members of the Northwood Golf Club had two deducted from their handicaps. Play was against Bogey and there were a first and second prize and a prize for the best score for the last nine holes v. Bogey in each class. The first prize in Class 1 was taken by Dr. Louis W. C. Macpherson (+ 1) with four up on Bogey. The second prize was won by Dr. J. Curtis Webb (9) who finished "all square." In the last nine holes Dr. Webb was four up, but he was unable to take this prize because he had secured the second prize, so that Mr. Bruce Hamilton (5), who was three up over the last nine holes, was awarded the prize. In Class 2 the first prize went to Mr. C. Gordon Watson (14) with a score of "all square," the second prize being won by Dr. F. R. Bisshopp (16) with a score of two down. The prize for the best score over the last nine holes was gained by Mr. E. W. Roughton (16) who finished one up.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The Barker anatomical prize for 1905 of £21 may be competed for by any student whose name is on the anatomical class list of any school in the United Kingdom. The prize is offered for a dissection of the left pneumogastric nerve, limited to its pharyngeal and laryngeal divisions, and including their connexions. Each preparation must reach the curator of the museum before March 31st, 1905, marked with a fictitious signature and accompanied by a sealed envelope containing the full name of the competitor and a declaration that the work has been carried out by himself. The form for this declaration can be obtained on application to the curator. The dissections are to be mounted in vessels fitted with glass covers but the covers must not be sealed down. Earthenware basins and plaster-of-Paris settings are not compulsory if the specimens can be better displayed and preserved by other means. No prize will be awarded unless sufficient merit is shown, 70 per cent. of the total marks being the minimum. Those dissections for which prizes are awarded become the property of the College. Where prizes are not awarded competitors may be refunded such amount of the cost of production as the examiners deem fit. The cost and risks of transport must be borne by the student.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 8TH.

Humanised v. Glycerinated Calf Lymph.

Mr. WEIR asked the Secretary for Scotland, having regard to the fact that the medical officers of the nine parishes in Scotland who applied last year for humanised lymph in preference to glycerinated calf lymph based their preference on the assumption that the former lymph was more potent, whether the Local Government Board for Scotland has taken steps to point out to these officers that statistics showed the percentage of successful vaccination with glycerinated calf lymph to be distinctly higher than the percentage of successes with humanised lymph.—The LORD ADVOCATE, who replied, said: I am informed that the reason given by the medical officers referred to for preferring humanised to glycerinated calf lymph was not that the former was more potent but that it kept its potency for a longer period. The Local Government Board for Scotland sees no reason for directing the attention of these officers to the statistics of relative success of the two varieties of lymph.

Mr. WEIR further asked whether Dr. F. Cadell, as superintendent of vaccination at the new town dispensary, Edinburgh, still collected vaccine lymph from the arms of children vaccinated by him and thus supplied humanised lymph to the Central Vaccine Institution for Scotland; and seeing that the last report of the medical superintendent of that institution showed that the percentage of successful vaccination with glycerinated calf lymph was higher than the percentage of success with humanised lymph, whether the question of using glycerinated calf lymph for the whole of the work of parochial vaccinators in Scotland would be considered, especially having regard to the fact that the use of humanised lymph had been widely condemned.—The LORD ADVOCATE replied: I am informed that Dr. Cadell still supplies humanised lymph to the Central Vaccine Institution for Scotland. The difference in the percentage of successes between glycerinated calf lymph and humanised lymph does not appear to constitute sufficient ground for ceasing to supply humanised lymph which is still in demand.

Intoxication and Lunacy.

Mr. HUNTER CRAIG asked the Secretary of State for the Home Department whether he would grant a return showing the total number of lunatics in the lunatic asylums in the United Kingdom who had lost their reason through excessive use of intoxicating liquor.—Mr. AKERS-DOUGLAS replied: The question of the causes to which cases of insanity can be attributed is a very difficult one. It is frequently dealt with in the annual reports of the Commissioners in Lunacy, which give full information on the subject. In particular I may refer my honourable friend to p. 9 and pp. 158-59 of the last report for the year 1902.

Phosphorus Poisoning.

Mr. CROOKS asked the Secretary of State for the Home Department whether his attention had been called to a case of death from phosphorus poisoning that occurred at the Poplar and Stepney Sick Asylum, due to a recent attack of "phosey jaw"; and, if so, what steps he intended to take in view of the fact that the patent used by Messrs. Bryant and May was stated to be innocuous.—Mr. AKERS-DOUGLAS replied: This case has been reported to the Factory Department and carefully investigated by the district and medical inspectors of factories as well as by the certifying surgeon. There seems to be no doubt that the case was one of phosphorus necrosis but nothing was elicited by the inquiry or at the inquest showing how or when the disease was contracted. It appeared that the woman who died on May 19th, 1904, had not worked at Bryant and May's factory since the autumn of 1902 except for one short period of three days. There does not appear to be any further action that I can take.

Miners' Phthisis.

Mr. MARKHAM asked the Secretary of State for the Home Department whether his attention had been drawn to a paper recently read before the Institution of Mining Engineers by Mr. F. FOX, M.I.C.E., and to the discussion thereon reported in Vol. xxvi. of the Transactions of the Society and to the statement of this gentleman that, under the present conditions in the mines of England, one out of every five miners working rock drills in advance headings was doomed to die every year from phthisis and that the dust from dry drillings was the chief cause of this mortality; whether he was aware that during the driving of the Simplon Tunnel, though the tunnel had reached a total length of 10¼ miles, at a depth of 9830 yards, with a temperature ranging from 97° to 131° F., not a single case of phthisis had occurred owing to the absence of dry drilling; and whether in these circumstances he would put into operation the powers he possessed under the Coal Mines Regulation Act and prohibit the use of mechanical drills operated on the dry system, permitting only the system of wet drilling.—Mr. AKERS-DOUGLAS replied: This is a matter on which a close watch has been kept by my department and some time ago I referred it to Dr. Haldane who, in conjunction with Mr. Martin, an inspector of mines, and Mr. Thomas, manager of the Dolcoath mine, has made a thorough inquiry into it. Their report has been presented to Parliament and will be issued, I hope, this week. I shall proceed at once to consider the question of proposing special rules to carry out the recommendations contained in the report.

Ballinasloe Asylum Medical Officer.

Mr. LONSDALE asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that the committee of the Ballinasloe Asylum had fixed the maximum age of applicants for the position of junior assistant medical officer at 40 years; whether this was in accordance with the regulations governing such appointments; and if not what steps he proposed to take in regard to the matter.—Mr. WYNDHAM replied: The reply to the first question is in the affirmative. The asylum committee was informed, however, that the maximum age limit prescribed by the statutory regulations is 32 years and it has now decided to advertise for candidates possessing the statutory qualifications.

THURSDAY, JUNE 9TH.

Registrars and Newspapers.

Sir WALTER FOSTER asked the President of the Local Government Board whether he was aware that the registrars of births and deaths had been accustomed to supply the weekly newspapers in country districts and small towns with the lists of deaths registered by them; whether this custom had been recently discontinued, and, if so, by whose orders; and whether he would communicate with the Registrar-General on the subject with a view to the continuance of a custom which gives information to the public.—Mr. LONG replied: I am aware that in a certain number of cases lists of deaths have been supplied to the press by registrars of births and deaths. This, however, has been done in contravention of the regulation on the subject. The Registrar-General has received complaints as to the publication of particulars which may lead to the identification of individuals and he considers that any such publication tends to make persons unwilling to furnish information for registration purposes and consequently to impair the trustworthiness of vital statistics. He has recently issued a circular with a view to a strict observance of the regulation in future and I am not prepared to interfere with his discretion in the matter.

An Alleged Scandal at Drogheda.

Mr. MOORE asked the Chief Secretary to the Lord Lieutenant of Ireland whether the attention of the Local Government Board had been called to the fact that a dead body was recently discovered in the morgue at Drogheda which had been left there for two months and upwards; and, if so, whether he would say who was the authority responsible for this neglect and what steps would be taken to call the attention of such authority to its duty to prevent a recurrence of such a scandal.—Mr. WYNDHAM replied: The Local Government Board will communicate with the local sanitary authority in respect to this matter.

Darness and its Medical Officer.

Mr. WEIR asked the Secretary for Scotland whether, seeing that the position of parochial medical officer for the parish of Durness, Sutherland, fell vacant in 1898, he would state why Durness was omitted from the Parochial Medical Officers (Scotland) Return, 1903.—Mr. GRAHAM MURRAY replied: I am informed by the Local Government Board for Scotland that the return furnished to it by the inspector of poor in August, 1903, stated that the resident medical officership in the parish had never been vacant since July 20th, 1895. On now communicating with the inspector of poor the Board learns that the office was vacant in 1898, although the parish was never without a medical man, as the present medical officer was in the parish for weeks before his predecessor left.

Vaccination Prosecutions.

Mr. CORBIE GRANT asked the President of the Local Government Board whether he was aware that at Lambeth police-court on May 31st three persons were summoned by the Lambeth vaccination officer before Mr. Hopkins for neglecting to have their children vaccinated; that in each case a solicitor appeared in support of the summons and each person was ordered to pay 25s. costs; and whether he would instruct the vaccination officer not to employ a solicitor except in cases of special difficulty.—Mr. LONG replied: I have no information as to the cases referred to but I am making inquiry on the subject.

MONDAY, JUNE 13TH.

Epidemic of Sore-throat at Glasgow.

Mr. WEIR asked the President of the Local Government Board whether he was aware that the epidemic of sore-throat which recently broke out at the Belvidere Hospital, Glasgow, was, like that at Woking last autumn and at Finchley early this year, attributable to the milk taken from cows out of health; and whether, seeing that Dr. A. K. Chalmers, the medical officer of health of Glasgow, stated that the outbreak in that city was due to teat eruption in the stock at the farm from which the milk-supply was obtained, he would consider the expediency of introducing at an early date such legislation as might be necessary to insure the occasional examination by a veterinary surgeon of all cows kept for the purposes of a public dairy.—Mr. GRANT LAWSON replied: I have no jurisdiction in Scotland with regard to sanitary matters, but I have seen a report of Dr. Chalmers as to the epidemic of sore-throat at the Belvidere Hospital, Glasgow. With regard to the suggestion for legislation I would repeat the answer which I gave to the honourable Member's question on March 29th last that I have caused the suggestion to be noted but that I could not promise to introduce legislation on the subject during the present session.

Ringworm and Ophthalmia.

Sir WALTER FOSTER asked the President of the Local Government Board whether he would state the number of Poor-law children of the metropolis who were at present suffering from ringworm and ophthalmia respectively, differentiating between those housed in the Metropolitan Asylums Board special homes, those in workhouses and workhouse infirmaries, and those in the district and separate Poor-law schools.—Mr. LONG said: I am informed that the number of metropolitan Poor-law children at present suffering from ringworm and ophthalmia respectively in the special homes and institutions under the control of the Metropolitan Asylums Board is as follows: ringworm, 568; ophthalmia, 345. The following is the number of these children in workhouses and workhouse infirmaries, and in district and separate Poor-law schools on April 2nd last, which is the latest date for which I can give the figures desired: workhouses and workhouse infirmaries, ringworm 284, ophthalmia 236; district and separate schools, including cottage homes and scattered homes, ringworm 159, ophthalmia 156.

Nursing of Sick Poor.

Sir HARRY SAMUEL asked the President of the Local Government Board whether boards of guardians of England and Wales would be given an opportunity of expressing their opinion upon the contemplated Order to be issued by the Local Government Board consequent upon the recommendations of the departmental committee upon the nursing of the sick poor in workhouses and whether a draft of such Order could be furnished to the Poor-law Unions' Association of England and Wales before the same is made absolute.—Mr. LONG said: I have received a large number of representations from boards of guardians on the report of the departmental committee on nursing which has led to the proposed Order and these representations have been duly considered. I cannot undertake to afford to boards of guardians generally any further opportunity of making representations on this subject but I will consider the suggestion in the latter part of the question.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ALFORD, HENRY JAMES, M.D. Lond., M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for the Taunton Rural District.

BARROW, G. A., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Manchester Northern Hospital for Women and Children.

BARWELL, HAROLD, M.B. Lond., F.R.C.S. Eng., has been appointed Surgeon Laryngologist to the Mount Vernon Hospital for Consumption.

BLAMEY, JAMES, M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Perranar-Worthal District by the Falmouth Board of Guardians.

COOPER, AUSTIN, M.D., B.Ch. Dub., has been appointed Honorary Assistant Anæsthetist to the St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.

COPELAND, PAULA T., M.B., Ch.B. Edin., has been appointed Medical Officer for Rousay and Eneilshay, Orkney.

ECCLES, W. MCADAM, M.S. Lond., F.R.C.S. Eng., has been appointed Examiner in Anatomy for the Fellowship Examination of the Royal College of Surgeons of England.

FLETCHER, R. B., M.B., Ch.B. Vict., has been re-appointed Senior Resident Medical Officer at the St. Mary's Hospital for Women and Children, Manchester.

FRASER, K., M.B., B.S. Aberd., has been appointed Certifying Surgeon under the Factory Act for the Orrell District of the county of Lancaster.

GUNN, ELIZABETH C., M.B., Ch.B. Edin., has been appointed Outdoor Physician to the Leith Hospital.

HENDERSON, ELEANOR R., M.B., Ch.B. Edin., has been appointed Resident Medical Officer at the Royal Hospital for Sick Children, Edinburgh.

HUNT, ALBERT W. DUNNING, L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator for the Chagford District by the Okehampton (Devon) Board of Guardians.

MASON, S. HERBERT, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Manchester Northern Hospital.

MILLER, JOHN, L.R.C.P. Lond., M.R.C.S., has been appointed to the Medical Charge of Troops at Topsham Barracks, Exeter.

ROBERTSON, EVA A., M.B., Ch.B. Edin., has been appointed Resident Medical Officer to Craiglockhart Poorhouse.

SCOTT, SYDNEY, B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at Evelina Hospital for Sick Children, London; also Chief Assistant in the Aural Department, St. Bartholomew's Hospital.

WILKES, J. HAMILTON, L.D.S., R.C.S. Eng., has been appointed as Honorary Dental Surgeon to the St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.

WILLCOX, W. H., M.D., B.Sc. Lond., D.P.H., has been appointed Medical Registrar to St. Mary's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD, BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 and fees.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House Surgeon. Salary £75 per annum, with board and lodging.

CENTRAL LONDON SICK ASYLUM, Colindale-avenue, Hendon, N.W.—Second Assistant Medical Officer and Dispenser. Salary £75 per annum, with board and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DERBYSHIRE ROYAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with apartments, board, &c. Also Assistant House Surgeon for six months. Salary at rate of £60 per annum, with apartments, board, &c.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon. Salary £50 per annum, with board and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants in the out-patient department.

HARTSHILL, STOKE-UPON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—Assistant House Surgeon for six months. Honorarium of £75, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £20, with board and residence. Also Ophthalmic Surgeon.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas.—Resident House Surgeon, unmarried. Salary £82 per annum, with board and washing.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £70 per annum, with residence and board. Also Second Honorary Anæsthetist.
LONDON LOCK HOSPITAL, Harrow-road, and 91, Dean-street, Soho.—Registrar.
METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Physician.
MIDDLESEX COUNTY ASYLUM, Upper Tooting, S.W.—Third Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.
NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry. Also Assistant Surgeon.
POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.
QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.
ROYAL SEA-BATHING HOSPITAL, Margate.—Resident Surgeon, as Junior and as Senior for six months each respectively. Salary at rate of £80 and £120 per annum, with board and residence.
ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Chemistry. Salary £150 per annum and fees.
SHAFTESBURY UNION WORKHOUSE.—Medical Officer. Salary £45 per annum.
STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees.—House Surgeon. Salary £250 per annum.
THROAT HOSPITAL, Golden-square, W.—Honorary Anæsthetist.
WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.
WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.
WESTERN GENERAL DISPENSARY, Marylebone-road.—Honorary Ophthalmic Surgeon.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeon under the Factory Act at Pomeroy, in the county of Tyrone; at Clonaslee, in Queen's County; and at Fleet, in the county of Southampton.

Births, Marriages, and Deaths.

BIRTHS.

BAYLISS.—On June 12th, at 5, Gay-street, Bath, the wife of Richard Arthur Bayliss, M.R.C.S. Eng., L.R.C.P. Lond., of a son.
BENNETT.—On June 9th, at Vancouver-road, Forest-hill, S.E., the wife of Colin E. Bennett, M.R.C.S., L.R.C.P. Lond., of a daughter.
GORDON.—On June 11th, at 3, Barnfield-crescent, Exeter, the wife of W. Gordon, M.D., F.R.C.P., of a son.
VISE.—On June 11th, at High-street North, East Ham, the wife of J. Neville Blithe Vise, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGES.

BEAMISH—CHAPMAN.—On June 9th, at St. Stephen's Church, South Dulwich, Robert Talbot Beamish, Lieutenant-Colonel, late R.A.M.C., to Eveline Margaret, only daughter of Thomas Horatio Chapman, of "Hurstbourne," Sydenham-hill, Kent.
DOWSETT—WEBB.—On June 8th, at the parish church, Walton-on-Thames, Ernest Blair Dowsett, L.R.C.P. Lond., M.R.C.S. Eng., L.D.S., to Ethel Ellen Sarah, elder daughter of Percy H. Webb, of Walton-on-Thames.
MILLARD—HUMBY.—On June 8th, at Holy Trinity, Cheltenham, W. J. Kelson Millard, M.D., F.R.C.P.E., of Trediden, Cheltenham, to Emma Rachel, only daughter of the late James Humby, of Collipriest, Cheltenham.
ROSS—FELTON.—On June 7th, at Bradford, Richard Alexander Ross, L.R.C.P. & S.I., younger son of the Rev. James Ross, to Eleanor Sheila, younger daughter of the late Captain Felton.
WESTMACOTT—HOWDEN.—On June 11th, at Holy Trinity, Paddington, by the Rev. J. W. Challenor, rector, of Christ Church, Moss Side, Manchester, assisted by the Rev. J. Horrocks, curate of the parish, Frederic Hibbert Westmacott, B.Sc. Viet., F.R.C.S. Eng., L.R.C.P. Lond., of 8, St. John-street, Manchester, eldest son of G. H. Westmacott, of Crumpsall-grove, Manchester, to Margaret Carlota, third daughter of the late Alexander Howden, and of Mrs. Alexander Howden, of 125, Gloucester-terrace, W.

DEATHS.

FFOLLIOTT.—On June 8th, at White Lodge, Hove, Brigade-Surgeon William ffolliott, F.R.C.S.I., late Royal Army Medical Corps, from heart failure following an attack of influenza, aged 65.
JENNER.—On Thursday, June 2nd, at St. Thomas's Hospital, Louis L. Jenner, M.B. Oxon, of the Lister Institute of Preventive Medicine, fourth son of the late Sir William Jenner, Bart., G.C.B., and of the Dowager Lady Jenner, of Greenwood, Bishops Waltham, Hants, aged 38.
MACKELLAR.—On June 15th, at Bella Vista, Royston Park, Pinner, Alexander Oberlin Mackellar, F.R.C.S., Chief Surgeon Metropolitan Police, aged 58. Funeral service 2.30, Saturday, at St. Anselm's Church, Hatch End, Pinner, and afterwards at Pinner Cemetery. Train from Euston (L. & N. W. Ry.) 1.40 P.M.
READ.—On June 11th, at 42, Foregate-street, Worcester, Isabel Margaret, the wife of Mabyn Read, M.D., aged 41 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ANOTHER QUACK CURE FOR CANCER.

IF warnings against the deceptive promises of quack cures and treatments were any good the general public should by now prove adamant to the specious allurements of all kinds of false medical advertisements. People, however, for one reason or another, continue to be deceived into wasting their money and damaging their chances of health and nothing prevails against what appears to be an inherent frailty of human nature. Nevertheless, when we see a more than usually flagrant example of deceptive pretence we cannot help inveighing against it. Particularly we like to attempt the destruction of advertisements which claim the cure of cancer. The very name of cancer carries terror and when any person believes that the dread scourge has fallen upon one who is near or dear to him he is apt to be the readiest prey to the advertising quack. Given up perhaps for hopeless by the honest and orthodox who realise how little there really is to be done for him a patient of this kind turns a ready ear to anyone who will promise him relief. Such promises he will find awaiting him on all sides, promises to be fulfilled equally little to whatever side he turns, but promises exacting guineas with equal impartiality whether the moment of success lies at the door of violet leaves, "electrical medicine" or "Bramarsandt." "Bramarsandt" is the latest of these patent remedies that claim to cure cancer and is not distinguished from others by its blatant and unjustifiable promises. It professes to be a permanent cure for cancer without operation and it has nothing to support it but its own professions. We mention it merely in the faint hope that a few may be spared the misery that these quack cures cause so widely to friends and relatives of the unhappy victims of cancer, doomed to disappointment by the fallacious and audacious hopes that these advertisements hold forth.

A PRIVATE CLUB.

THE medical officer of the West Brixton Medical Aid Society has submitted to us a copy of the rules of that society which have been designed to do away with the evils of canvassing. The fifth rule is: "The society shall have no canvassers and can only be increased in membership by private recommendation," and in further support of this rule the following declaration form is submitted to those who desire to become members of the society:—

> I desire myself, my wife, and my family (*strike out description not required*), to become a member of the West Brixton Medical Aid Society, and I solemnly affirm—first, that none of the persons involved have ever been attended regularly by a Brixton, or other local, medical man; and second, that my family has not a total income of more than £2 5*s.* a week.
>
> *Signed* .....
> *Address* .....
>
> *Date* .....

He has invited our opinion upon the ethical position of a medical man issuing such a declaration. We think that the clause and declaration sufficiently safeguard him from any censure by the General Medical Council.

ASSOCIATION FOR THE ORAL INSTRUCTION OF THE DEAF AND DUMB.

THE Association for the Oral Instruction of the Deaf and Dumb, which is under Royal patronage and has the Earl of Crewe for its president, has just issued its annual report, which shows that the work of the past year has been very successful. The practising school was attended during 1903 by 52 pupils, 27 girls and 25 boys, and the highest Government grant was obtained—namely, £90 for general instruction and £60 for technical instruction. It should be mentioned that the benefits of the association are not limited to the comparatively small number of deaf and dumb children who attend the practising school but are extended to many hundreds of children outside its immediate sphere of work who derive the advantages of the oral system from the instruction of teachers trained at the college. Although the work done by the association is satisfactory the same cannot be said of its financial position, for there is an annual excess of expenditure over income of at least £500. It is to be hoped that the charitable public will not allow this deficiency to accumulate.

CONFIDENCE IN VACCINATION.

THE universal experience of small-pox hospitals shows that officials and visitors who have been efficiently vaccinated within the seven or eight years preceding exposure to infection never contract the disease, and Mr. A. W. Martin, medical officer of health of Gorton, Manchester, recently offered to give a convincing proof of his firm belief in the immunity so easily obtainable. On the occasion of an antivaccination lecture recently delivered in Gorton Mr. Martin invited the principal speaker to bring his young son and to visit the small-pox hospital in company with Mr. Martin and his son, aged

nine years, who had been vaccinated and revaccinated. The invitation was declined, a result which was, perhaps, fortunate for both sides. If either the antivaccinationist or his son had caught the disease and died from it an immense amount of frothy declamation would have been poured forth, denouncing Mr. Martin as guilty of a cruel murder.

AMBER AND CANCER.

WE have received the following letter from the Cape Colony:—

SIRS,—It is a hard thing for us not doctors to bring forward a medical argument in which that profession has made a most exhausting study. It may seem presumptuous on our part to hold hard to our theory in the solution of a disease which has baffled the medical profession in the past and has given the present a difficulty which perhaps they are on the verge of completing. We, the runners-up in the race for one of the chief prizes in the medical world and in the cause of suffering humanity, will put forward a simple theory in the following manner. We will come straight to the point of our article and say what will cure cancer. In our opinion to grapple with a disease which thrives or decreases according to the constitution of the patient is not with the knife, while a remedy may be found to stay the course of the growth by enclosing it in a bond which is impossible to break. What is that which will hold the smallest atom of living germ and which is perfectly harmless to the patient? Our reply is amber, that extraordinary vegetable substance which was known to the Greeks as ἤλεκτρον (*sic*), and from which we derive our modern word "electricity." We conclude this somewhat ambiguous article by saying that proof will put to the test what we write and that history being stranger than fiction gradually bears out the fact that there is nothing new under the sun—no, not even the cure for cancer.

I am, Sirs, yours faithfully,

May 14th, 1904. R. MIDDLETON.

Perhaps our correspondent will enlighten us in the future as to how the amber is to "enclose the growth in a bond which is impossible to break."

WESTERN OBSTETRICS IN THE EAST.

Dr. J. W. Ballantyne of Edinburgh contributes to the *Women Students' Medical Magazine* for June an article on Western Obstetrics in the East compiled from letters received by him from medical women resident in China and India. The Chinese, we are told, are beginning to have such faith in the power of western medical science and practice that they will send for an English practitioner from great distances; nevertheless the Chinese dread of the foreigner greatly hampers the work of the western practitioner of medicine. In a case where forceps were indicated these instruments had to be exhibited in the guest room of the mandarin, whose wife was the patient, and their use explained by means of diagrams to the patient's brother, two gentlemen visitors, and some boys. The lying-in chamber of a Maharonee is described as a "horrid little hole," 10 feet by 5 feet, built of stone, with no window and only a small door. The article, though brief, throws much light upon the difficulties attending obstetric practice in the East and makes very interesting reading.

AN EMERGENCY POCKET CASE BOOK.

UNDER this title Messrs. Reynolds and Branson, Limited, of 13, Briggate, Leeds, publish in book form a set of 30 clinical charts designed by a captain in the Royal Army Medical Corps. The charts are ruled with spaces for entering the patient's history and condition when first seen, as well as daily notes of the progress of the case, temperature, pulse, respirations, motions, medicine, and diet. In many departments of clinical work a note-book of this kind might be found useful for the making of brief memoranda to be expanded subsequently. The price of the book of charts is 6*d*. (postage 1*d*.).

"ENTERPRISE."

IN reference to the letter headed "Enterprise" (THE LANCET, May 7th, 1904), we find on inquiry that we have been entirely in error in describing the gentleman referred to as having held no appointments entitling him to style himself a specialist. We find that he has every right to style himself a specialist on the diseases of the eye, ear, and throat, and we trust that our mistake will not in any way injure the gentleman in question.

THE DANGERS OF EPILEPSY.

THE Manchester city coroner held an inquest on June 10th as to the death of a foreman printer named Thomas, 38 years of age, who was the subject of epilepsy. On his way home from work about 4.20 A.M. on May 18th he was seen to fall. Two postmen also going home from work went to his assistance and held him as well as they could until two policemen came. The latter decided to go for an ambulance and while they were away two other policemen came up and assisted the postmen to hold Thomas, as he continued to struggle. The officers took him in a tramcar to the infirmary where some wounds on his face caused by his fall were dressed. He was then taken home and put to bed but he gradually got worse and died on June 8th. Mr. S. C. Salter, who attended him, made a post-mortem examination and said that all the wounds which he found except one might have been caused by his own violence and his fall. "But there was an abrasion of the throat which appeared as though someone had gripped him with force that was unnecessary, with the result that it was so tender that he could not swallow sufficient food. This injury could not have been caused accidentally. Death was due to heart failure following on pneumonia as an indirect result of his injuries." A brother of the deceased stated in evidence that the latter told him that when he recovered consciousness two policemen were sitting on him and treating him roughly. The constables who took Thomas to the infirmary and others who saw the affair said that nothing was done to him beyond holding him and preventing him from hurting himself. The verdict was that death was due to natural causes, and as to the injury to the throat the jury returned an open verdict and exonerated the police from all blame and thought that they had acted with the greatest kindness. This is quite in accordance with the general character of the Manchester police, but it is a pity that the injury to the throat was not accounted for.

REPUTED 130 YEARS OLD.

THE death is reported at Karkoff of a man reputed to have seen 130 years of life. He claimed to remember laying bricks with his brother at the building of the University of Karkoff over a century ago. Ivachnenko, the man referred to, was blind for ten years before his death.

S.—There is very great probability that the child will show signs of the disease, even if abortion should not occur. In spite of the absence of symptoms in the wife she should receive a thorough but careful specific treatment. Our correspondent does not state the stage of pregnancy now reached, but the earlier it is the greater the chance of preventing syphilitic manifestations. It is important so to adjust the doses of mercury that the desired object may be attained without impairing the wife's health. The husband would probably also be the better for a course of treatment. We do not publish the letter, as the patients might fear identification.

P. G. T.—The questions cannot be answered off-hand. All the circumstances (and some have not been communicated to us) should be taken into consideration. Our correspondent requires the assistance of a lawyer.

Mr. John H. Russell.—The Viavi treatment has been thoroughly exposed in our columns and in those of *Truth*.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M., St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (22nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (23rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (25th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Clinique. (Skin.) 5.15 P.M. Mr. G. Heaton: Some Remarks on the Symptoms and Treatment of the Intra-cranial Complications of Middle-ear Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Heart Disease in Children.

TUESDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. Thomson: Clinique. (Medical.) 5.15 P.M. Dr. J. Taylor: Degenerative Diseases of the Spinal Cord and Some Unusual Forms of Nervous Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. C. Williams: High Frequency Currents (illustrated by lantern slides).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Sir W. Gowers: Some Ocular Symptoms of Disease.

WEDNESDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Clarke: Clinique. (Surgical.) 5.15 P.M. Dr. J. Taylor: Degenerative Diseases of the Spinal Cord and Some Unusual Forms of Nervous Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

UNIVERSITY COLLEGE (University of London) (Physiological Theatre).—5 P.M. Dr. W. P. May: Advanced Lectures on the Tracts of the Brain—Lecture VIII.: Cranial Nuclei and their Central Connexions.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. S. H. Habershon: Cases in the Wards; Pneumothorax, Chronic Pneumonia, Mitral Stenosis, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. G. N. Meachen: Diseases of the Skin attacking the Face.

ST. PETER'S HOSPITAL (Henrietta-street, Covent Garden).—4 P.M. Mr. S. Edwards: Cases in the Wards.

THURSDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. P. Horrocks: Prolapse of the Uterus.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Keetley: Hernia.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Gibbs: Demonstration of Surgical Cases. (Post-Graduate Course.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Dr. T. D. Lister: Asthma: its Pathology and Diagnosis. (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Garrod: Chorea.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Dr. Roberts: Cases from the Wards.

FRIDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. Lawson: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Paget: Surgical Cases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Mr. Gunn: Ocular Paralyses.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

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We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 16th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb	Remarks at 8.30 a.m.
June 10	29·74	S.E.	0·08	86	64	54	56	59	Cloudy
,, 11	29·92	N.E.	...	83	62	53	53	55	Cloudy
,, 12	30·11	N.E.	...	96	65	52	53	56	Overcast
,, 13	30·10	S.W.	..	116	72	53	56	59	Fine
,, 14	29·96	S.W.	0·01	109	70	58	59	63	Cloudy
,, 15	29·79	S.W.	0·23	107	65	56	57	61	Cloudy
,, 16	29·94	S.W.	...	125	71	56	56	62	Cloudy

During the week marked copies of the following newspapers have been received:—*Tamworth Mercury, Ardrossan and Saltcoats Herald, South Wales Daily News, Eastern Morning News, Staffordshire Sentinel, Reading Mercury, Aberdeen Free Press (Weekly), Daily News, Daily Chronicle, Westminster Gazette, Hertfordshire Mercury, Standard, Surrey Advertiser, Coventry Herald, Birmingham Daily Mail, Mining Journal, Local Government Chronicle, Liverpool Courier, British Journal of Photography,* &c.

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